

# Feed Situation

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## SUMMARY

### Feed Grain Prices Up Moderately; Acreage Reduced In 1978

Feed grain prices were up moderately during the past month as livestock and poultry feeding increased and exports were heavy. Recent rises followed the wide price variations last winter caused by weather conditions which hampered grain movements as buyers competed to fill their requirements from limited supplies available for immediate delivery.

Demand for grain is expected to continue strong, and prices likely will strengthen a little more during the rest of the 1977/78 marketing year. Large placements of grain in the 3-year reserve will help strengthen prices as all 1977 corn and sorghum under loan became eligible on May 1 for the farmer-held reserve. Prospects for 1978 crops will have more bearing on prices later this spring and summer.

Both domestic use of feed grains and exports likely will be larger in 1977/78 than the year before. Domestic use is projected at about 136 million metric tons, 4 percent more than in 1976/77—mainly the result of increased livestock and poultry feeding. Exports are projected at a record 52 million tons, 2 percent more than the previous record in 1976/77.

But the record 1977 feed grain supply is well above prospective use, and stocks at the end of the 1977/78 marketing year will be up sharply to around 44 million metric tons—about 14 million above the year before. However, about a third of the carryover may be held by farmers in the 3-year reserve and, therefore, will be isolated from the market unless prices rise appreciably.

Larger supplies and lower prices of oilseed meal are contributing to expanded livestock feeding.

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Since late fall, disappearance of soybean meal in relation to grains has been unusually heavy. Heavier feeding of protein concentrates apparently is in response to profitable hog and broiler feeding and anticipated higher prices for feeder calves and fed cattle.

April 1 prospective plantings of 123 million acres of feed grains are 4 percent below 1977 plantings, mostly reflecting planned grower participation in the last year's set-aside program. But corn, at 80.2 million acres, would be down 3 percent. Sorghum acreage of 15.9 million acres would be down 6 percent, oat acreage would be down 8 percent, and barley acreage down 6 percent.

But acreages actually planted often vary from intentions because of developments in weather and economic conditions and changes in farmers' market outlooks. And this year, the April intentions are more difficult to assess because of changes in the 1978 feed grain, cotton, and wheat programs announced at the time the survey was being conducted. The program changes are likely to encourage grower participation and further reduce feed grain acreage from April 1 indications.

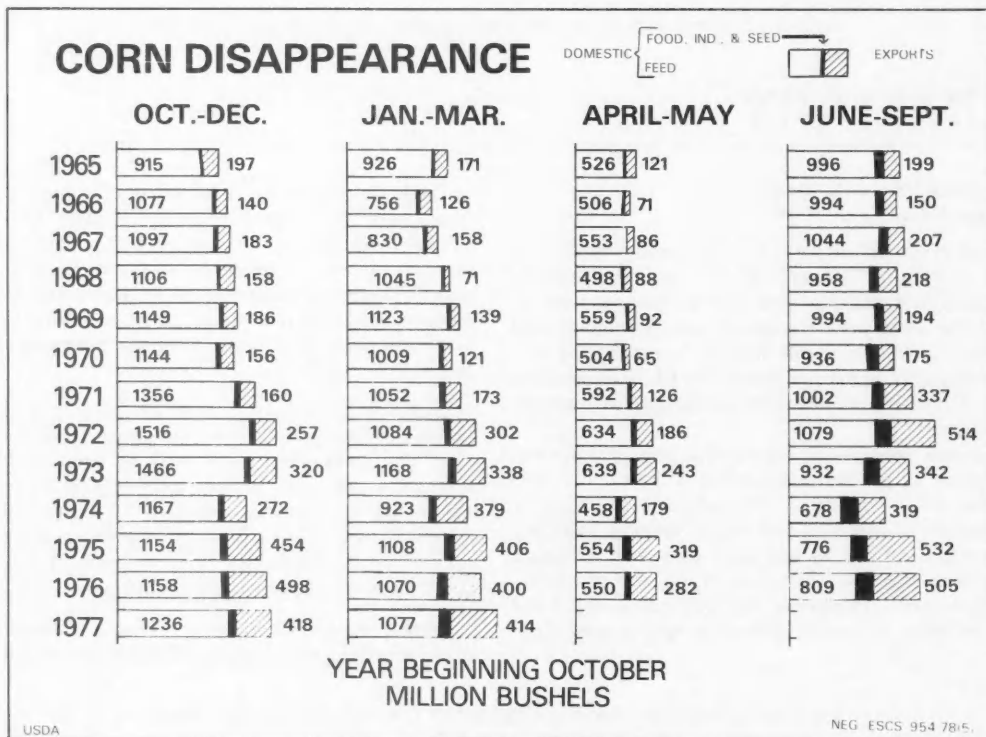
Soil moisture supplies in principal grain growing areas are much improved from a year ago when dry conditions prevailed. But persistent cold, wet weather has delayed crop plantings this

spring. As a result, more uncertainty than usual at this time of year surrounds new crop production and utilization prospects.

Therefore, instead of making a specific estimate of how harvest and utilization may turn out, two possibilities are outlined—one representing favorable cropping conditions both here and abroad; the other, unfavorable cropping conditions. The chances are about 2 out of 3 that production, use, and prices will be within these projected ranges.

With favorable conditions, U.S. feed grain harvests in 1978 could exceed last year's record 202 million metric tons. Domestic feeding would likely continue to increase for the fourth straight year in response to favorable livestock-feed price relationships. But with large crops abroad, exports would decline, U.S. carryover stocks would build for the fourth consecutive year, and farm prices would average near loan levels, unless excess supplies are placed in the grain reserve, which will be available for 1978 crops.

With unfavorable production conditions, output would be substantially smaller. There would be some reduction in domestic feed use as feeders curbed expansion plans. But reduced world supplies would lead to larger exports. Carryover stocks would be reduced and feed grain prices would be higher.





# FEED SITUATION

## EARLY OUTLOOK FOR 1978

### Implications of Plantings Report

#### April 1 Prospects Point To Moderate Reduction In Feed Grain Acreage

There is more than the usual uncertainty this year about how actual plantings may differ from April 1 prospects. This is due to several factors. Farmers may not have been able to fully consider their alternatives under the 1978 Feed Grain Program. Also, some additional features of the programs relating to feed grains, wheat, and cotton were announced on March 29,—too late for consideration by farmers responding to the April 1 prospective plantings survey.

In addition, spring weather is late this year and field work has been delayed by frozen ground and excessive moisture in many of the important grain growing areas. This raises questions concerning what crops will actually be planted and what the yields may be. Late planted corn yields, for instance, usually are less than those of early planted varieties. When corn planting is substantially delayed, growers are likely to switch to soybeans. But the current ample moisture is a positive production factor.

Farmers reported as of April 1 that they expected to plant a total of 123 million acres to corn, sorghum, oats, and barley—4 percent less than last year's plantings. It appears that most of this reduction was due to growers' plans to participate in the set-aside program.

The April prospective plantings report pointed to smaller plantings of each of the four feed grain crops than were indicated in the January prospective plantings report. So it appears that participation in the feed grain program will be larger than was indicated at the first of the year. For the three feed grain crops included in the 1978 feed grain program, April prospects compared with January prospects showed prospective corn acreage down 1 percent, sorghum down 9 percent, and barley down 5 percent. Grower intentions for oats as of April 1 were 6 percent below January 1.

As of April 1, farmers were intending to plant 80.2 million acres of corn, 3 percent less than in 1977. Intended plantings were down from last year in all regions. The largest acreage reductions were in the major growing areas, where intended plantings were down 1 percent. But the largest percentage reductions were in the South Central and South Atlantic States, which were down 13 and 14

percent, respectively, where growers are shifting to soybeans.

Farmers indicated plantings of 15.9 million acres of sorghum for all purposes in 1978. This would be 6 percent less than 1977 plantings, 13 percent less than 1976 plantings, and the smallest sorghum acreage since 1962. Texas still is the leading sorghum producing State, with intended plantings of 5.1 million acres, 32 percent of the U.S. total, although intentions were 9 percent below 1977 plantings. Kansas farmers' intended plantings of 4.7 million acres are down 3 percent. Nebraska farmers intended to plant 2.25 million acres, a reduction of 6 percent from 1977, and Missouri plantings of 0.9 million acres would be down 5 percent. These four States account for 81 percent of U.S. sorghum acreage. Most of the reduction in planting intentions since January 1 occurred in Kansas, Texas, and Missouri.

Barley acreage planted last fall plus intended plantings this spring total 10.0 million acres. This is down 6 percent from 1977, but 9 percent above 1976. The April 1 barley plantings intentions are 5 percent below the January 1 intentions in the comparable States.

Of the four leading barley-producing States, North Dakota indicated an 11-percent decrease and Montana a 5-percent decrease; California's was unchanged; and Minnesota, up 5 percent. These four States account for 62 percent of the indicated U.S. barley acreage.

Oat planting intentions totaled 16.4 million acres, down 8 percent from 1977. Grower intentions as of April 1 were 6 percent below the level they intended to plant on January 1. Much of the decline results from growers shifting from oats in favor of the set-aside crops in order to maximize program returns and protection. Of the six States with more than 1 million acres, the following decreases in acreage from 1977 are indicated: North Dakota, 21 percent; South Dakota, 20 percent; Minnesota, 17 percent; and Iowa, 6 percent. Wet weather has seriously hampered spring seeding.

Farmers indicated on April 1 they expected to cut 60.8 million acres of hay in 1978, an increase of 1 percent over both 1977 and 1976. Major hay States expected to harvest larger acreages in 1978 are Colorado, Kansas, Kentucky, Montana, Nebraska, New York, North Dakota, Pennsylvania, Tennessee, and Wyoming. Major States expecting

# Planted Acreage

Crops	1976	1977	Indicated 1978 <sup>1</sup>
<i>Million acres</i>			
Feed grains			
Corn .....	84.4	82.7	80.2
Sorghum .....	18.4	17.0	15.9
Oats .....	16.7	17.8	16.4
Barley .....	9.2	10.6	10.0
Total .....	128.7	128.1	122.6
Wheat, all .....	80.2	74.8	65.4
Rice .....	2.5	2.3	2.6
Rye .....	2.7	2.7	2.9
Soybeans .....	50.2	59.1	63.7
Flaxseed .....	1.1	1.5	1.0
Sunflowerseed* .....	.8	2.3	2.7
Sugarbeets .....	1.5	1.3	1.3
Dry edible beans .....	1.5	1.4	1.5
Upland cotton .....	11.6	13.6	12.8
Sub total .....	280.8	287.1	276.5
Hay <sup>2</sup> .....	60.3	60.5	60.8
Grand total .....	341.1	347.6	337.3

<sup>1</sup> Based on April 1978 Prospective Plantings. <sup>2</sup> Harvested acreage. \*Minn., N. Dak., S. Dak. and Texas for 1977 and 1978; Minn. and N. Dak. for 1976.

# Hay

Year	Acreage harvested	Yield per harvested acre	Production	Season average price
	<i>Million</i>	<i>Tons</i>	<i>Million tons</i>	<i>Dollars per ton</i>
1969 .....	59.7	2.11	126.0	24.70
1970 .....	61.5	2.06	127.0	26.10
1971 .....	61.4	2.10	129.1	28.10
1972 .....	59.7	2.15	128.6	31.30
1973 .....	61.8	2.17	134.2	41.60
1974 .....	60.2	2.10	126.4	50.90
1975 .....	61.3	2.16	132.2	52.20
1976 .....	60.3	1.99	120.0	60.30
1977 <sup>1</sup> .....	60.5	2.17	131.1	54.00
1978 .....	<sup>2</sup> 60.8	<sup>3</sup> 2.12	<sup>3</sup> 129.0	53.00

<sup>1</sup> Preliminary. <sup>2</sup> April 1 Prospective Plantings. <sup>3</sup> Projected.

to harvest less acreage in 1978 are California, Idaho, Missouri, and Texas.

Soybean acreage for 1978 is expected to be record high at about 63.7 million acres, 8 percent more than the 1977 crop of 59.1 million acres, which was the previous record high.

# Production Possibilities

Moisture conditions through early May generally were much more favorable for crop production than they were a year ago, when subsoil moisture supplies were short in practically all areas. Soil moisture this spring is adequate to surplus in the Midwest. The prolonged drought has ended in Cali-

fornia and most other areas of the West. Only in parts of the Southern Plains are soil moisture supplies short. Despite these generally favorable conditions, land preparation and seeding of small grain crops is lagging in principal producing areas because of wet or saturated soils and below normal temperatures. This raises some concern about the small grain crop outlook, particularly for oats.

The early-season outlook for 1978 crops cannot be clearly defined because of uncertainties about production conditions, farmers' response to grain programs, and how economic developments over the next few months will affect harvests, prices, and utilization of crops this year.

For this reason, two grain supply and use alternatives are outlined. The first assumes that crop production worldwide will be relatively high because of generally favorable planting, growing, and harvesting conditions. The second assumes that crop production worldwide will be relatively low because of generally unfavorable conditions. Chances are about 2 out of 3 that the final outcome of 1978/79 grain production and utilization will fall within this range.

If cropping conditions are generally favorable in the United States and the rest of the world, crop production could be larger than grain utilization in 1978, putting downward pressure on prices and resulting in a further buildup in stocks. However, prices in the United States in 1978/79 probably would still average around 1977/78 levels. Soybean prices, however, would probably average below 1977/78 levels.

With favorable cropping conditions, U.S. feed grain production could exceed the 1977 record 202 million metric tons. Feeding rates likely would increase because of favorable livestock-feed price relationships. Exports would decline because of large crops abroad. U.S. carryover stocks would increase for the fourth consecutive year, and farm prices would average near loan levels, unless excess supplies are placed in the reserve program, which will be available for 1978 crops.

But if cropping conditions are not generally favorable in the United States and the rest of the world, crop production could be less than grain utilization in 1978/79, which would cut into stocks. Domestic feeding would decline somewhat, but exports would be larger because of poor crops abroad. Under this set of circumstances, prices would run significantly higher than in 1977/78 and carryover stocks would decline well below the levels estimated for next October 1.

# Recent Farm Program Developments

It was announced March 29 that farmers would receive land diversion payments on their 1978 feed grain crops if they set aside acreage equal to 10

percent of their 1978 plantings for harvest of corn, sorghum, and barley in addition to the 10 percent set-aside required for participation in the program. Thus, farmers would have to set aside acreage for harvest equal to 20 percent of their 1978 plantings of corn, sorghum, and barley for harvest in order to qualify for diversion payments. Also, 1978 planted acreage of these crops cannot exceed 1977 plantings.

Diversion payments will be 20 cents per bushel for corn and 12 cents per bushel for sorghum and barley. At signup, participants may receive an advance payment of 10 cents per bushel for corn and 6 cents for sorghum and barley. Payments will be calculated by multiplying these rates by the farm's established yields, times the actual acreages planted for harvest. For example, on a farm with an established yield of 100 bushels of corn per acre,

a farmer who plants 100 acres of corn and has 20 acres of set-aside (10 acres under the initial provisions required for participation in the program and 10 acres under the new paid diversion feature) would receive diversion payments of \$2,000 (20 cents times 100 bushels times 100 acres).

The formula would be the same for sorghum and barley but the rate would be 12 cents per bushel and the farm's established yields for these crops would differ from its corn yield.

If a farmer wants to figure how much per acre he is being paid to keep land out of production he would divide his total diversion payment by the total number of acres set aside and diverted. On the corn example above, the farmer's \$2,000 diversion payment would be divided by the 20 acres set aside and diverted from production, which would be \$100 per acre.

## WORLD COARSE GRAIN SITUATION AND OUTLOOK<sup>1</sup>

### Weather Generally Favorable Over Grain Areas

Estimated soil moisture supplies through April were generally above normal in the European USSR and the agricultural areas east of the Volga River. Well above normal temperatures in March initiated vegetative growth 15-20 days earlier than normal in several areas. However, unusually cold weather and above normal precipitation in April have delayed spring grain planting.

In North Africa, light scattered April 17-23 showers fell in Tunisia, but no significant rainfall touched Morocco or Algeria.

Cool weather dominated much of *Western Europe* during the first half of the week (April 17-23). Light to moderate precipitation was recorded in Western Europe and Northern Spain. Moderate to locally heavy showers dampened Northern Italy, but moisture was light and scattered in other regions of that country. Rainfall in Eastern Europe was generally light to moderate.

Moderate to heavy April showers dampened Buenos Aires province, but generally dry weather favored harvesting and other fieldwork elsewhere in Argentina.

In Australia, April rainfall was moderate over the western territory, but little significant rainfall fell in the other principal grain areas. As planting time nears for winter grains, moisture conditions

remain fairly good in most areas except South Australia which continues to suffer from a serious drought.

### Wrap-up of the 1977/78 Situation

World coarse grain producers harvested 690 million metric tons in 1977/78, slightly less than last season's record harvest despite a 20-percent drop in USSR output and declines for Brazil, Australia, and Thailand which were affected by drought. These shortfalls were offset by Western Europe's recovery from the severe 1976/77 drought and record U.S. output.

Concluding the season's harvest sequence are the Southern Hemisphere's corn and sorghum crops now being combined in Australia, Argentina, Brazil, and South Africa. With dry conditions occurring over several areas, these countries are expected to harvest around 50 million tons of coarse grains, which would be down 4 percent from last year. Still, this is substantially more production than expected earlier.

...*Australia's* 1977/78 coarse grain crop which has been hit by drought is estimated at 4.4 million tons, 14 percent below last year's harvest. The sorghum crop is estimated at 0.6 million tons, down 36 percent, and the barley harvest was estimated at 2.3 million tons, down 21 percent.

...*Brazil's* 1977/78 coarse grains production (mainly corn) has been adversely affected by drought and is estimated at 15.1 million tons, down 22 percent. In addition to drought, low support rate reduced planting too. This reduction and strong domestic demand may cause Brazil to import corn.

<sup>1</sup>Based primarily on the Foreign Agricultural Service's World Grain Situation Circular, May 1978.

...Argentina's 1977/78 coarse grain harvest is estimated at 16.9 million tons, down 2 percent from last year. This year's corn and sorghum harvests are estimated at 16 million tons, up 3 percent, but the oat and barley crops which were harvested last December were hit hard by drought and were down by 35 and 16 percent, respectively.

...South Africa's 1977/78 coarse grain harvest, which was saved by good January rains from an early season drought, is estimated at 10.4 million tons, up 3 percent over last year. The corn crop is estimated at 9.8 million tons, up 2 percent over last year.

World coarse grain exports for 1977/78 are estimated at 81.3 million tons (excluding intra EC-9 trade), slightly below last year's level. The principal U.S. competitors will account for 25 percent of world exports and the United States 63 percent; the U.S. share is up 1 percent over 1976/77 while the share of major competitors will be off 2 percent.

World coarse grain ending stocks<sup>2</sup> for 1977/78 are estimated at 81 million tons, up 11 percent from 1976/77 and the largest since 1971/72. U.S.

<sup>2</sup>Stocks data are based on an aggregate of differing local marketing years and should not be construed as representing world stock levels at a fixed point in time. Stock data are not available for all countries and exclude those in such areas as the People's Republic of China and Eastern Europe.

stocks account for around 50 percent of the world's total carryover.

World 1977/78 wheat and coarse grain consumption reached 1,073 million tons which would be a second straight record. This results mainly from the continued strengthening of the feed complex which now seems likely to use around 447 million tons in 1977/78. U.S. feed use, forecast at 123.3 million tons, would be up from last year but still below the levels reached in the early 1970's. The USSR's feed use of wheat and coarse grain for 1977/78 at 115 million tons would be up 6 percent over 1976/77 as livestock inventories showed relatively good improvement over year-earlier inventories in most classes of livestock. However, total consumption of grains for feeding in Western Europe for 1977/78 is estimated at 97 million tons, up more than 2 million tons over last season.

#### World 1978/79 Coarse Grain Projection

World coarse grain production for 1978/79 is projected under two alternative assumptions: generally favorable worldwide and generally unfavorable worldwide crop conditions. Under the former, total non-U.S. coarse grain production would be 7 percent better than the 1977/78 output at 488.3 million tons, and under the latter assumption output would be about the same as last year. World total coarse grain output under Alternative I would be 6 percent above the 1977/78 level and 4 percent less under Alternative II.

## U.S. OUTLOOK FOR REST OF 1977/78

### Concentrate Feeding

#### Feeding Up 3 Percent During January-March

Much improved livestock feed price ratios have stimulated the feeding of concentrates (grains, oil-meals, animal and grain protein, and other mill feed ingredients) this season. In January-March, concentrate feeding totaled 44 million metric tons, 3 percent above a year earlier. For October-March, total feeding was 92 million tons, up 4 percent from that period in 1976/77.

Livestock feeders usually make decisions on their concentrate feeding operations during the October-September feeding year—at least in broad outline—in the fall after feed crops have been harvested and movement of calves off pastures and ranges is heavy. Feed costs have a bearing on livestock feeders' profit expectations and so influence the number of farrowings and the number of cattle placed on feed. Feeding rates per animal usually vary with feeding margins. Poultry feeders can

respond more quickly to changing market conditions and sometimes adjust their feeding plans several times during the year.

On balance, the beef cattle, dairy, and poultry feed users will have the greatest impact on increased feeding of concentrates this season, while the hog sector will perhaps contribute the least.

#### Strong Feed Demand by the Beef Cattle Industry Seen

The Nation's beef cattle herd on January 1 declined for the third straight year as cow-calf operators continued to cull cows heavily because of continued poor returns from feeder calves. Despite the 3-percent smaller calf crop in 1977, calves are being placed on feed at record levels, reflecting low feed costs and optimism for higher prices of fed cattle. The very strong demand for feeder calves is evidenced by record feedlot placements and strong

prices. Thus, strong demand for feed by the cattle industry is virtually assured for the next several months. However, feeders are bidding very high prices for calves and feed costs also have risen somewhat more than seasonally since last fall. Prices and returns of cattle going to market this summer along with feed crop prospects largely set the stage for feed demand by cattle feeders in 1978/79. It appears that unless fed cattle prices advance further from the present \$53-\$54 level, feeding margins may narrow by summer.

### Hog Feeding Expectations Lowered

Farrowing intentions during the spring and summer of 1977 pointed toward 8 to 10 percent more pork production during October-September 1977/78. But it now appears that pork production this season will be only the same as in 1976/77. Recent pig crop reports indicate that hog feeding during April-September may be only about level with a year earlier. Producers have indicated plans to reduce their June-August farrowings by 2 percent. In this event, feed demand by the hog sector could continue sluggish through autumn.

### Dairy Sector Feed Demand Up

With the recently announced increased milk price support, dairymen likely will continue to feed their cows large quantities of concentrates. Last winter was especially harsh and dairymen reportedly fed about 4 or 5 percent more concentrates. In many cases, the proportion of high protein feeds in the ration likely was increased to help offset poor quality forage. Milk production is expected to stay at a high level, a factor that will also help to support demand for feed.

### Record Large Broiler Production Contributes to Feed Expansion

The broiler industry, with its quick turnover time for production response, is reacting to strong pork and beef prices. Last fall, broiler production was up only 3 percent but it was up around 8 percent during January-March. Reports are that all eggs from the broiler hatchery supply flocks are being utilized. Broiler output for the rest of the feeding season will likely average between 6 to 8 percent more than last year.

Egg output in 1977/78 is estimated to be 3 percent more while turkey production may be up by 4 percent.

### Grain Feeding

The volume of feed grains fed during October-March totaled 72½ million metric tons, 4 percent above a year earlier. Feeding for the entire year is

Feed concentrates consumed by livestock and poultry

Item	Year beginning October <sup>1</sup>		
	1975	1976 <sup>2</sup>	1977 <sup>3</sup>
<i>Million metric tons</i>			
Annually:			
Concentrates			
Supply . . . . .	235.3	248.8	268.9
Fed			
Feed grains . . .	115.6	112.5	117.8
Wheat . . . . .	1.5	6.5	3.5
Rye . . . . .	.2	.1	.3
By product feeds . . . . .	33.4	31.1	33.5
Total, fed . . .	150.7	150.2	155.1
<i>Million</i>			
Grain-consuming animal units (GCAU's) <sup>4</sup>			
Dairy cattle . . . .	12.3	12.3	12.1
Cattle on feed . . .	19.8	19.2	20.7
Other cattle . . . .	5.5	5.3	4.8
Hogs . . . . .	17.4	19.4	20.4
Poultry . . . . .	18.0	18.3	19.0
Other livestock . .	1.4	1.4	1.8
Total . . . . .	74.6	75.9	78.8
<i>Tons</i>			
Concentrates fed per GCAU . . . . .	2.02	1.98	1.97
<i>Million metric tons</i>			
Periods:			
Concentrates fed			
Oct.-Dec. . . . .	46.7	45.9	48.4
Jan.-Mar. . . . .	45.6	42.9	44.0
Apr.-May . . . . .	22.6	22.1	
June-Sept. . . . .	35.9	39.3	
Total, year <sup>5</sup> . .	150.7	150.2	

<sup>1</sup> Except oat and barley supplies which start June 1.

<sup>2</sup> Preliminary. <sup>3</sup> Projected. <sup>4</sup> Livestock and poultry fed during the October-September feeding year weighted by relative consumption of grain and other concentrates; 1 unit is equal to 1 milk cow. <sup>5</sup> Periods may not add due to implied negative wheat feeding in some periods.

Projected Animal Output—October-September 1977/78

Item	Change from 1976/77
Fed beef . . . . .	+6
Pork . . . . .	0
Milk . . . . .	+1
Broilers . . . . .	+6
Eggs . . . . .	+4

Livestock-Poultry Feed Price Ratios

	October-April average	
	1976/77	1977/78
Beef/steer/corn, Omaha . . . .	16.7	22.2
Hog/corn, Omaha . . . . .	15.6	21.8
Milk/feed, U.S. . . . .	1.52	1.71
Broiler/feed, U.S. . . . .	2.4	2.9
Egg/feed, U.S. . . . .	8.0	7.2



forecast at 118 million metric tons, 4 percent more than in 1976/77.

Wheat feeding in January-March totaled 50 million bushels, bringing the total since last fall to around 64 million bushels, down substantially from the 83 million in that period a year earlier. Wheat feeding during October-September 1977/78 probably will fall well below the 248 million bushels in 1976/77. Prospects are for a smaller wheat crop, a potentially strong export demand again in 1978/79, and more grain insulated from the market through the Government's loan and reserve programs, all leading to stronger wheat prices. Consequently, wheat feeding this summer likely will be significantly below last year's 145 million bushels when wheat prices in many parts of the country were below those of feed grains.

### Feeding of Proteins Headed for Record

Apparent feed consumption of high-protein feeds (oilmeals, animal and grain proteins) in the current feeding season is racing toward a record 20.4 million metric tons (soybean meal equivalent), 13 percent above last year and 5 percent above the previous peak in 1975/76. Through the first 6 months, estimated feeding of protein totaled 12 million tons, 9 percent above the year before.

In recent years, it appears that the feeding industry has undergone a sharp change. During the early 1970's, protein feed accounted for only about a tenth of all concentrate feeds. During 1974-76, protein feed made up 13 percent of the total; in the current season, protein likely will account for 14 percent of all concentrates fed.

Rising feed costs since 1972, plus generally thin feeding margins, probably have speeded the feeding industry toward searching for and adopting more efficient feeding practices. The poultry industry, with its generally fixed rations and small profit per unit of output, has been the leader in adopting and using new feeding technology. More hogs are being fed in total confinement. Since prices vary among the grains, feeders can shift different grains in and out of their rations (within limits). Also, cattlemen can shift to forages and roughages if available. However, price movements among protein ingredients are a bit stickier, suggesting that feeders may have less of an opportunity to switch protein in rations. Consequently, the feeding industry's demand response to large changes in protein feed prices may be somewhat less than its response to changes in grain prices.

### Soybean Meal Domestic Use Up Sharply

Domestic disappearance of soybean meal from processing plants in 1977/78 is forecast at 15 mil-

lion metric tons, up 17 percent from last year. The hog and poultry sectors are the major users of soybean meal. While broiler production will be heavy this summer, hog production likely will be holding level if producers do not stray far from their earlier plans. Prices between protein and grain this season still favor grain use but to a lesser extent than last year.

Soybean meal prices (44-percent Decatur) since last October averaged \$159 per short ton, \$40 below that of a year earlier. Even with a smaller Brazilian bean crop currently being harvested and Peru's modest fishmeal production, the record-large U.S. bean supply is a moderating influence to a sharper runup like last year when meal soared to \$276 in April. Meal prices for the entire season are forecast to average somewhat below last year's \$200 per ton.

### Molasses

#### Supplies Level; Prices Off But Rising

U.S. feed molasses supplies for 1977/78 are projected to reach 810 million gallons, not materially different from last year's 813 million (table 23). Production from domestic sources is estimated to be about 5 percent below last year's 430-million-gallon outturn. Beet molasses supplies are down substantially because of the 15-percent smaller sugar beet crop and lower than usual sugar and molasses extraction rates. Despite sugar cane production little different from 1976 levels, U.S. cane molasses output may pull up a little short of the 225 million gallons produced in 1976/77.

With imports projected at 400 million gallons and allowing for exports and other uses of molasses, availability of molasses for domestic feeding in 1977/78 totals around 625 million gallons, about the same as a year earlier.

With the decline in the nation's beef cattle herd, demand for molasses has sagged, leading to a sharp drop in the price of molasses in recent years. For example, cane molasses at New Orleans in 1976/77 averaged \$45 per short ton compared with \$69 in 1973/74. Since last October, prices have averaged a little under \$40 a ton. With stronger cattle prices and heavier placements of animals in feed lots, some strength from the present \$41-a-ton level appears likely over the next few months. Improved milk-feed price ratios also are boosting demand for molasses in the dairy sector.

### Corn

#### Feeding Slows

After increases of 4 percent last summer and 7 percent last fall, corn fed to U.S. livestock and poultry in January-March totaled 1,080 million bushels, only slightly more than a year earlier.



This slowdown apparently was largely due to hog producers' decisions to curb the expansion in farrowings. Earlier they had indicated a substantial increase in the December-February pig crop. But the cold winter, disease problems, and the outlook itself may have caused the slowdown in farrowings, although it is still unclear why hog producers curtailed their expansion plans in view of the improved returns from hog feeding. Current prospects are for about the same number of hogs on feed in 1977/78 instead of the 9 to 10 percent increase expected earlier.

Although increased feeding of cattle and poultry will help to sustain feed demand for the rest of the season, the drastic slowdown in hog expansion has caused the 1977/78 forecast of corn feeding to be cut 2 percent from the earlier estimate to 3,750 million bushels.

### **Exports Gaining Momentum**

The forecast of U.S. corn exports for 1977/78 remains at a record 1,750 million bushels, moderately above the levels the past 2 years. Exports through April totaled approximately a billion bushels, 40 million less than in that period of a year ago. Shipments lagged during the first 4 months of the season because of slow foreign buying, weather-related transportation problems, and a port elevator explosion. However, the volume moved during recent weeks has picked up sharply as logistical problems began to ease and lake ports opened. Demand—especially by the USSR—continues strong. As of late April, all outstanding sales for shipment during the remainder of this season were running almost 250 million bushels more than a year ago. Commitments to the USSR totaled 387 million bushels, compared with its record takings of 414 million in 1975/76.

U.S. corn exports will run into competition from crops now being harvested in the Southern Hemisphere. (See page 7 for a discussion of production and export prospects in Argentina, South Africa, and Brazil.)

### **Carryover To Increase**

With total use now forecast at more than 300 million bushels less than the 1977 crop, carryover stocks this October 1 are expected to reach 1.2 billion bushels, compared with 884 million a year earlier, and the largest since 1964.

Virtually all corn carryover stocks on October 1 will continue to be privately owned. An estimated 35 to 45 percent of the carryover will be in the 3-year grain reserve program.

### **Price Firmness To Continue**

Corn prices have risen about 70 to 80 cents a bushel since their low last summer and fall. In

April, prices received by farmers averaged \$2.26 per bushel, only about a nickel below a year earlier. Prices likely will continue firm until crop prospects here and abroad begin to unfold this summer and as reserve placements increase after May 1, when all 1977-crop corn under loan became eligible for the reserve. Last spring, corn prices began a decline which continued into fall because (1) supplies on hand were more than adequate for needs, (2) relatively little was held under loan, (3) timely rains in the Corn Belt enhanced crop prospects, (4) world grain crops were relatively good, (5) foreign purchases were slow, and (6) farmers marketed heavily to make room for their record 1977 crop.

Corn supplies this spring again are more than adequate for needs, but there are some different factors in the price picture. First, on April 1 over 900 million bushels, or a fourth of the supply, were tied up in the Government loan program. Even though some of this grain will be redeemed and put into the market, many of the loans will likely enter the 3-year farmer-held reserve program. Out of the 3,840-million-bushel supply on April 1, some 915 million was under loan, leaving 2,925 million for the market to meet expected needs of 2,630 million.

Farmers may continue to hold their corn in storage this summer in hopes that 1978 crops here or abroad will fall short of needs. Also, the record heavy export movement expected this spring and summer will likely be a pricing factor. However, if prospects this summer point to large crops here and abroad, prices could slip.

### **White Corn**

#### **Indicated Acreage Up Modestly; Prices Strong For 1977 Crop**

As of April 1, farmers in 7 major producing States indicated seedings at around 451,000 acres to white corn, up only modestly from 1977 acreage. The 1977/78 white corn market has been very strong, with prices running well above those of a year earlier and much higher than the typical 30- to 50-cent-per-bushel premium over yellow corn (table 2). In view of the high white corn prices, the indicated acreage is surprisingly low. But set aside, the aflatoxin problem in the Southeast, and strong competition from soybeans appear to be tempering expansion.

Much of the strength in white corn prices is due to the small 1977 crop coupled with good domestic demand for white corn products such as corn meal. White corn meal prices (wholesale) at New York are running about a tenth higher than last year's average of \$11 per cwt. The 1977 white corn crop, estimated at 31 million bushels (10 major producing States), was down 23 percent because of less acreage and lower yields. Also, the portion of the

Table 2—White corn: Production, exports and prices

	Unit	1974	1975	1976	1977	1978
Acreage <sup>1</sup>						
Planted .....	Thou. acres	659	696	552	515	<sup>2</sup> 526
Harvested .....	Thou. acres	611	631	513	451	
Yield per acre <sup>1</sup> .....	Bu.	64	68	77	68	
Production <sup>1</sup> .....	Mil. bu.	39.3	42.6	39.5	30.6	
Exports .....	Mil. bu.	<sup>3</sup> 9.0	8.5	3.3	<sup>4</sup> 1.0-3.0	
No. 2 White, Kansas City <sup>5</sup> ..	Dol. per bu.	4.09	2.92	2.91	<sup>6</sup> 3.40	
No. 2 Yellow, Kansas City <sup>5</sup> ..	Dol. per bu.	3.08	2.69	2.26	<sup>6</sup> 2.19	
Corn meal, white, N.Y. <sup>7</sup> .....	Dol. per cwt.	15.50	12.90	11.10	<sup>6</sup> 12.00	

<sup>1</sup> Indiana, Illinois, Iowa, Missouri, Kansas, Kentucky, Tennessee, Texas, Alabama and Georgia. These states account for about 90% of U.S. white corn production. <sup>2</sup> April 1, 1978 Prospective Plantings; includes allowance for Indiana, Iowa, and Kansas for which data not reported; total for other 7 states reported is 451,000 acres. <sup>3</sup> January-September, 1975. <sup>4</sup> Forecast. <sup>5</sup> Year beginning October.

<sup>6</sup> October-March average. <sup>7</sup> Source: *Milling and Baking News*.

1977 crop available for food use may have been somewhat smaller than usual because of the widespread incidence of aflatoxin in the Southeast.

Largely due to tight supplies, exports of 730,000 bushels during October-February 1977/78 lagged last year's pace by around 1.3 million bushels. Thus, unless exports rebound sharply during March-September, overseas shipments for the entire marketing season will fall short of last year's 3.3-million-bushel volume. Most U.S. white corn exports are commercial sales to Latin America and Africa.

### Sorghum

#### Feed Use Recovers in January-March

Following a rather sluggish feed disappearance last fall, apparent feed use of sorghum in January-March of 139 million bushels was a fourth more than a year earlier. The heavier feed rate during the quarter reflects heavy placements of cattle in feed lots and relatively low prices of sorghum. Sorghum feeding for the entire season is forecast at 5-10 percent above last year's 428 million bushels. In this event, sorghum feed requirements during April-September would be around 10-20 million bushels more than last year. Cattle feeding margins are the most favorable in many months, encouraging feeders to feed liberal amounts of grain. Cattle on feed as of April 1 were up 10 to 26 percent in all Western States except California where they were down 15 percent.

U.S. sorghum exports during October-April were running about 20 million bushels behind the pace of a year earlier. Sorghum exports for the marketing year may fall somewhat short of last year's 246 million bushels because of increased competition from larger sorghum crops in the Southern Hemisphere. Total use in 1977/78 probably will be well below production, raising the October 1 carryover to 190-200 million bushels, more than double that of last year. A large portion of the carryover likely will be in the grain reserve program.

Sorghum prices received by U.S. farmers have increased from \$2.80 per cwt. last fall to \$3.52 during April. With the probability of a little more strength in corn prices this summer, sorghum prices likely will remain firm over the next few weeks. About 40 percent of the 412 million bushels of sorghum stocks on April 1 was in the Government's loan program. Thus, a portion of the expected disappearance for the remainder of the year must come from the loan. However, there is always considerable new crop sorghum fed and exported during the summer which distorts the disappearance estimate during July-September. Continued good demand by cattle feeders should help to sustain sorghum prices at least until new crop supplies become available in the summer. Also, wheat feeding this summer likely will be sharply below last year's heavy volume because of higher prices of wheat relative to other grains. Thus, sorghum's competition will be mainly from corn and other feeds.

### Oats

#### Carryover Up Sharply

Disappearance of oats in 1977/78 will fall well short of 1977 production, raising this June 1 carryover to more than 300 million bushels, or about double last year's small volume. With smaller supplies, feeding of oats has declined in recent years. In 1977/78, feeding will not differ greatly from last year's 489 bushels which was the lowest in decades. Combined food and seed use totaled 90 million bushels, about the same as last year. Food use of oats seems to be holding level as increased use for processing into natural breakfast cereals and products may about offset the decline in oatmeal production. Seed use is down because of declining acreage.

In 1976/77, oat prices were strong compared with other grains because supplies were the smallest in more than 40 years. But with good weather and the much larger crop in 1977, oat prices in

1977/78 fell back to a more typical relationship to corn of 90 percent on a pound-for-pound basis. Last August, prices received by farmers for oats reached a low of \$.90 a bushel, \$.13 under the national loan rate. As the season progressed, they advanced to \$1.22 in February before falling to \$1.21 in April. However, with prospects of fewer oat acres in 1978 coupled with delayed plantings this spring, prices have shown new life. For example, in late April, No. 2 heavy oats at Minneapolis were up about \$.18 a bushel from late February to \$1.38. Oat acreage in 1978 will likely get bumped down as producers participating in the set-aside programs are likely to switch out of oats to comply with set-aside requirements.

Prices during the 1978/79 season largely hinge on the outcome of production, but the large carryover of old crop oats will have a tempering effect on the price pattern. As of early May, there were 65 million bushels of oats under loan, including 21 million in the reserve program. With low prices, producers have not been inclined to pay off their loans—redeeming only 10 million out of 75 million entered into the program. The Commodity Credit Corporation (CCC) does not have any oats in its grain inventory.

### Barley

#### Carryover Largest in 5 Years

The carryover of barley this June 1 will total around 170 million bushels, or about a third more than a year earlier and the largest since 1973 as total use falls short of the 1977 crop. Domestic use of around 325 million bushels and exports of 60

million were fairly close to 1976/77 levels. The bulk of exports went to Korea and Europe. The expansion in beer production slowed and barley used by the brewing industry totaled 133 million bushels, up only 2 million from a year earlier.

With supplies large compared with use, barley prices during the 1977/78 season dropped to the lowest level since 1972/73. No. 3 or better feed barley at Minneapolis averaged \$1.65 per bushel, down sharply from \$2.34 the year before. No. 3 or better malting at Minneapolis averaged \$2.25 compared with \$3.13 in 1976/77.

Prices of both feed and malting barley advanced seasonally from the lows of last summer.

In early May, feed barley at Minneapolis was running around \$1.90 per bushel, up around \$.35 from March quotations, and malting barley had advanced about \$.20 to \$2.50 a bushel. Some of this unusual late season strength probably reflects the slow start of the 1978 planting season. In early May, planting of spring barley lagged its usual time schedule, and prospective acreage may fall somewhat below 1977 seeding of 10.6 million acres.

Despite the larger carryover of barley this June and some seasonal decline, it appears likely that barley prices this summer will average somewhat above last year's low levels. Other factors that will support barley prices are the farmer-owned grain reserve and the Government loan program. Farmers placed 80 million bushels or about a fifth from their 1977 crop under loan. As of early May, 16 million bushels had been redeemed and 65 million remained under loan including 18 million under the 3-year reserve. Thus, a significant part of the barley carryover is isolated from the market.

Table 3—Corn: Domestic and foreign market prices

Month/day <sup>1</sup>	1976/77					1977/78				
	Illinois mid-month farm price	Mo. av. No. 2 (fob) Gulfport	U.S. No. 3 Rotterdam cif	Argentina Plate Rotterdam cif	EC import levy	Illinois mid-month farm price	Mo. av. No. 2 (fob) Gulfport	U.S. No. 3 Rotterdam cif	Argentina Plate Rotterdam cif	EC import levy
<i>Dollars per bushel</i>										
July 19 .....	2.88	3.08	3.37	3.68	0.93	1.85	2.16	2.39	2.53	2.77
Aug. 23 .....	2.64	2.95	3.10	3.48	1.07	1.57	1.96	2.12	2.34	2.76
Sept. 20 .....	2.65	2.92	3.24	3.50	1.10	1.60	1.99	2.22	2.41	2.71
Oct. 25 .....	2.34	2.70	2.96	3.28	1.54	1.60	2.12	2.32	2.60	2.79
Nov. 22 .....	2.03	2.50	2.78	3.09	1.97	1.91	2.37	2.73	2.92	2.41
Dec. 20 .....	2.29	2.62	2.86	3.10	1.96	2.02	2.44	2.73	3.24	2.60
Jan. 17 .....	2.40	2.83	3.14	3.51	1.51	2.01	2.43	2.72	3.24	2.89
Feb. 21 .....	2.40	2.81	3.03	3.33	1.74	2.01	2.57	2.82	2.95	2.87
March 21 .....	2.37	2.78	3.00	3.18	1.89	2.14	2.70	3.04		2.97

<sup>1</sup> Day refers to Rotterdam markets and EC import levy.

## FACTORS AFFECTING CORN YIELDS

by

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**ABSTRACT:** Among the more important factors affecting corn yields are weather, fertilizer use, technology, and planted acreage. When removing the corn blight of 1970 from the analysis, these variables used in multiple regression analysis explain about 96 percent of the variation in U.S. corn yields during the period 1954-1977. Expanded use of nitrogen and other production technology have strongly influenced growth in yields while expansion into less productive acreage has tempered yields in recent years.

**KEYWORDS:** Corn yields, weather, crop yield modeling, production technology, economic trend.

This analysis of U.S. corn yields is based on conditions during 1954-1977. It shows the influence of major determinants—plantings, nitrogen application rates, July precipitation, and trend. The 24 years of observations generally conform to the period often cited as a weather cycle and, therefore, include both favorable and unfavorable weather for corn yields (1,3,4).<sup>1</sup> Numbers in parentheses ("t" statistics) below are a measure of statistical reliability. A value of 2 to 3 suggests strong statistical reliability. The coefficient of determination ( $R^2$ ) indicates the proportion of variation in yields that was explained by the set of determinants. The standard error of estimate (S.E.) indicates the range in yield around estimated yields that includes a two-thirds confidence interval. The Durbin-Watson statistic (D.W.) indicates if there is independence between equation errors for successive years (a value of 2 corresponds to independent errors).

The results below were obtained using ordinary least squares regression and are generally consistent with other studies (see for example (2)).

$$\begin{aligned} \text{YCH} = & 13.744 - .3661 \text{ ACP} + .3080 \text{ N} + .04192 \text{ DXJUL} \\ & (-2.63) \quad (3.09) \quad (1.71) \\ & - 14.256 \text{ D70} + .8374 \text{ T} \\ & (-3.24) \quad (1.71) \\ R^2 = & .96 \quad \text{S.E.} = 3.95 \quad \text{D.W.} = 2.24 \end{aligned}$$

Variable definitions are:

- YCH: U.S. average corn yield—bushels per harvested acre.  
ACP: Corn plantings—million acres.  
N: Rate of nitrogen application—pounds per harvested acre receiving nitrogen.  
DXJUL: Weighted index of July precipitation for five major states (Illinois, Indiana, Ohio, Iowa, and Nebraska). July precipitation for a State is weighted by its planted acreage—1964-1967 = 100.<sup>2</sup>  
D70: Dummy variable is used for 1970 to reflect the unusual occurrence of southern corn leaf blight in 1970—where D70 = 1 in 1970; = 0 otherwise.  
T: Time trend or proxy for technology—1954 = 54; 1955 = 55...

The statistical results indicate that the variables used here are significant and show the expected directional relationships (signs) with yields. Planted acreage has a negative coefficient, which reflects lower productivity of additional land brought into corn production. On the other hand, nitrogen application, July precipitation, and trend show a strong positive effect. The higher rate of fertilizer use since the mid-fifties has accounted for over half of the increase in yields. The trend or technology variable accounted for the rest of the increase in yields. It reflects better management and cultural practices facilitated by improved vari-

<sup>1</sup>Numbers in parentheses refer to references listed at the end of this article.

<sup>2</sup>Weather index was provided by Michael Weiss, Commodity Economics Division.

eties of corn, advances in pesticides, mechanization, and irrigation. The trend variable and fertilizer variable are highly correlated since fertilizer rates have increased steadily during this period. The weather proxy used here shows the impact of precipitation in July when the need for rainfall during pollination is especially critical for kernel development.

The results also suggest that corn blight in 1970 reduced the average U.S. yield about 14 bushels per acre. While the blight was an important factor, there was also drought in the western Corn Belt that adversely affected 1970 yields.

The variables used in this analysis explain about 96 percent of the total variation in corn yields during 1954 to 1977. Actual yields and those estimated from the regression equation (using the actual values of the determinants) are shown in the accompanying figure. The largest deviations from actual yields were in 1972 and in 1974. In 1972, acreage was relatively low, growing conditions were excellent, and the average yield hit a record high of 97 bushels. In 1974, there was an extremely wet spring, a hot dry summer, and early frosts that led to an extremely poor yield.

These results appear to include the major factors affecting annual U.S. aggregate corn yield, but the parameters suggest that there is room for improvement. Of the causal factors used here, weather has the greatest year-to-year variation. To

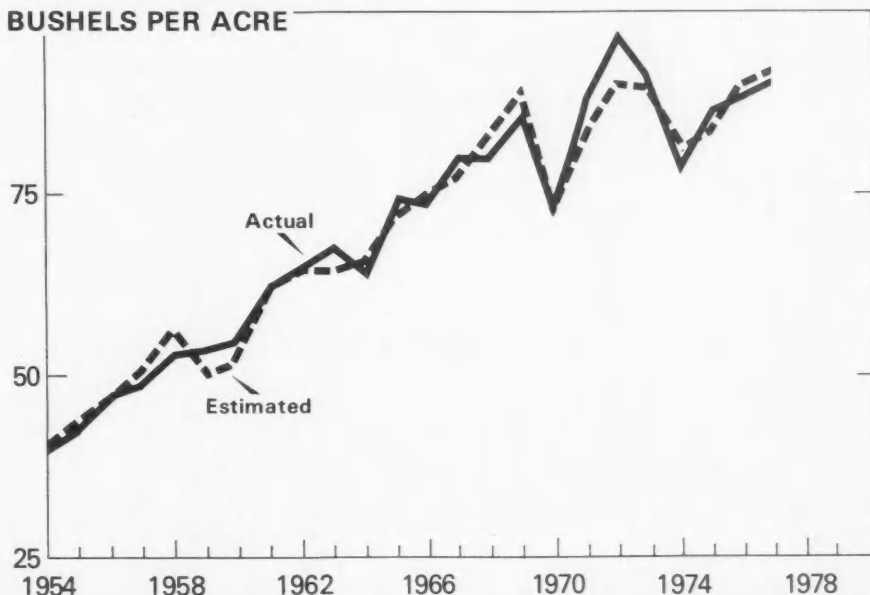
improve regression results further, research efforts could concentrate on weather factors. For instance, precipitation and temperature data for critical periods during the growing season rather than a monthly index could be examined. Also, expanding the regional coverage for weather data from the five States used in the analysis might also improve the results. In the final analysis, of course, forecasts based on a formal model rely on accurate estimates of the values of determining variables.

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## U.S. CORN YIELDS

BUSHEL PER ACRE



USDA

NEG. ESCS 3059-78 (5)

Table 1.--U.S. Corn Yields and Related Variables, 1954 to 1977

Crop of	Yield per harvested acre (YCH)	Planted acreage (ACP)	Nitrogen applied per harvested acre receiving nitrogen (N)	July precipitation weighted by planted acreage 1964-67 = 100 (DJUL)
	Bushels	Mil. acres	Pounds	Index
1954	39.4	82.2	27	71.9
1955	42.0	80.9	30	101.0
1956	47.4	77.8	32	125.3
1957	48.3	73.2	35	113.6
1958	52.8	73.4	38	231.3
1959	53.1	82.7	41	90.3
1960	54.7	81.4	44	87.8
1961	62.4	65.9	48	153.0
1962	64.7	65.0	52	165.7
1963	67.9	68.8	54	145.4
1964	62.9	65.8	58	105.0
1965	74.1	65.2	75	106.9
1966	73.1	66.3	86	92.0
1967	80.1	71.2	93	96.1
1968	79.5	65.1	104	110.4
1969	85.9	64.3	110	176.7
1970	72.4	66.9	112	102.2
1971	88.1	74.2	107	124.5
1972	97.0	67.1	115	133.9
1973	91.3	72.3	114	144.5
1974	71.9	77.9	103	52.9
1975	86.3	78.6	105	68.5
1976	87.9	84.4	127	94.6
1977	90.8	82.7	128	113.0



Table 4.--Corn: Distribution for food, industrial, beverage and seed use  
(Marketing year beginning October)

Item	1968	1969	1970	1971	1972	1973	1974	1975	1976*	1977**
	Million bushels (grain equivalent)									
Shipments--(Food, industrial & alcohol use)										
Wet corn milling (grind)	207	216	242	246	284	295	315	343	362	380
Dry milling										
Corn meal (regular & degermed)	33	28	24	21	20	19	18	18	17	17
Corn flour etc.	4	6	8	10	12	14	13	15	17	18
Hominy grits (food)	21	19	17	14	13	13	10	11	10	10
Breakfast foods 1/	22	23	23	24	24	25	24	24	25	25
Alcoholic beverages:										
Distilled liquors	33	31	24	25	29	33	16	21	21	22
Fermented malt liquors	42	43	45	45	45	47	49	50	53	57
Total shipments	362	366	383	385	427	446	445	482	505	529
Seed	12	13	17	15	16	18	18	20	20	18
Trade--Corn products										
Imports										
Meal	11	6	7	73	27	65	125	42	15	
Exports										
Meal (relief programs and commercial sales)	9,996	9,239	7,915	5,486	8,004	8,458	5,781	6,441	5,913	
Hominy grits	1,536	1,928	4,309	1,758	2,114	1,641	1,275	1,124	1,100	
Starch	1,915	1,522	1,385	1,394	1,896	2,676	3,229	2,011	2,396	
Sugar (Dextrose)	1,180	1,085	1,015	1,571	2,310	2,383	2,346	2,145	1,713	
Syrup (Glucose)	669	426	419	357	391	480	468	466	500	

Shaded numbers are largely based on the 1972 Census of Manufactures; intra Census years are interpolations. See May 1976 issue of Feed Situation for earlier years.

1/ Assumes sizeable quantities of corn flour are purchased by breakfast food manufacturers from the dry milling industry.

\*Preliminary.

\*\*Forecast.

TABLE 5. --FEED GRAINS: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1974-78 1/

YEAR 2/	SUPPLY				DISAPPEARANCE				ENDING STOCKS			
	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL	DOMESTIC USE		EXPORTS	TOTAL DISAPPEARANCE	PRIVATELY HELD	GOVT. 4/	TOTAL	
					FEED	INDUSTRY AND SEED						
												TOTAL
MILLION METRIC TONS												
1974/75	21.5	150.5	.5	172.5	105.4	16.1	121.5	35.7	157.2	15.2	.1	15.3
1975/76	15.3	184.6	.5	200.4	116.2	17.0	133.2	50.0	183.2	17.2	0	17.2
1976/77 5/	17.2	193.4	.4	211.0	112.6	17.9	130.5	50.6	181.1	29.9	0	29.9
1977/78 5/	29.9	201.5	.3	231.7	117.8	18.5	136.3	51.6	187.9	43.8	0	43.8
1978/79 *	43.8	210.7	.3	254.8	130.6	19.4	150.0	44.8	194.8	60.0	0	60.0
1978/79 **	43.8	171.0	.3	215.1	115.4	18.6	134.0	53.6	187.6	27.4	0	27.4
MILLION METRIC TONS												
ACREAGE					YIELD	SEASONAL INDEX			PRICE SUPPORT OPERATIONS			
BASE OR ALLOTMENT					SET-ASIDE	HARVESTED	PER ACRE	PRICE RECEIVED BY FARMERS	TOTAL PAYMENTS TO PROGRAM PARTICIPANTS			
								6/				
MILLION ACRES					MILLION DOLLARS			MILLION DOLLARS				
					1967=100							
1974/75	89.0	---	121.2	99.8	1.51	251			328 8/			
1975/76	89.0	---	122.5	104.5	1.77	220			115 8/			
1976/77 5/	89.0	---	126.7	106.3	1.82	182			222 8/			
1977/78 5/	89.0	---	128.1	107.0	1.88	171 7/			711-761 9/			
1978/79 *	88.7	---										
1978/79 **	---	---										

11/ AGGREGATED DATA ON CORN SORGHUM OATS AND BARLEY. 2/ THE MARKETING YEAR FOR CORN AND SORGHUM BEGINS OCT. 1; JUNE 1 FOR OATS AND BARLEY. 3/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 4/ UNCOMMITTED GOVERNMENT ONLY. 5/ PRELIMINARY. 6/ EXCLUDES SUPPORT PAYMENT. 7/ OCTOBER-APRIL 1977/78. 8/ DISASTER PAYMENTS. 9/ DEFICIENCY AND DISASTER PAYMENTS. \*\* REFLECTS RELATIVELY FAVORABLE PRODUCTION CONDITIONS WORLDWIDE. \*\* ASSUMES UNFAVORABLE PRODUCTION CONDITIONS WORLDWIDE.

TABLE 6. --SORGHUM: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1974-78

YEAR BEGINNING OCT. 1	SUPPLY				DISAPPEARANCE				ENDING STOCKS SEPT. 30			
	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL	FEED	DOMESTIC USE		EXPORTS	TOTAL DISAPPEAR- ANCE	PRIVATELY HELD 1/	GOVT. 2/	TOTAL
						FOOD, INDUSTRY, AND SEED	INDUSTRY: TOTAL					
MILLION BUSHELS												
1974/75	61	623	---	684	431	6	437	212	649	35	0	35
1975/76	35	753	---	788	502	6	508	229	737	51	0	51
1976/77 3/	51	720	---	771	428	6	434	246	680	91	0	91
1977/78 3/	91	791	---	882	460	6	466	225	691	191	0	191
1978/79 *	191	790	---	981	530	6	536	210	746	235	0	235
1978/79 **	191	600	---	791	430	6	436	250	686	105	0	105
MILLION DOLLARS												
ACREAGE												
YIELD												
SEASONAL PRICES												
PRICE SUPPORT OPERATIONS												
GOVT.												
SUPPORT: TOTAL												
NATIONAL : OR : PAYMENTS												
: TARGET : TO :												
: AVG. : :												
: NO. 2 : NO. 2 :												
: TEXAS : TEXAS :												
: GULF PORTS : GULF PORTS :												
: NO. 2 : NO. 2 :												
: YELLOW : YELLOW :												
: LOAN RATE : PRICE : PARTICI-												
: PANTS :												
: MILLION												
ACRES												
BUSHELS												
DOLLARS												
PER CWT.												
1974/75	5/	0	17.6	13.8	45.1	4.96	5.04	5.62	5.47	1.88	2.34	68 7/
1975/76	5/	0	18.1	15.4	49.0	4.23	4.46	4.93	4.97	1.88	2.34	20 7/
1976/77 3/	5/	0	18.4	14.7	48.9	3.62	3.49	3.66	4.11	2.55	2.66	32 7/
1977/78 3/	16.4	0	17.0	14.1	56.2	3.16 6/	3.48 6/	3.74 6/	4.12 6/	3.39	4.07	305-330 8/
1978/79 *	13.7					3.21-3.39				3.39	4.07	
1978/79 **						3.93-4.29						

1/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 2/ UNCOMMITTED INVENTORY. 3/ PRELIMINARY. 4/ EXCLUDES SUPPORT PAYMENTS. 5/ AVAILABLE FOR TOTAL FEED GRAINS ONLY. 6/ OCTOBER-APRIL 1977/78 AVERAGE. 7/ DISASTER PAYMENTS. 8/ DEFICIENCY AND DISASTER PAYMENTS ESTIMATED. \* REFLECTS RELATIVELY FAVORABLE PRODUCTION CONDITIONS WORLDWIDE. \*\* ASSUMES UNFAVORABLE PRODUCTION CONDITIONS WORLDWIDE.

TABLE 7. --OATS: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1974-78

YEAR BEGINNING JUNE 1	SUPPLY		DISAPPEARANCE				ENDING STOCKS MAY 31									
	BEGINNING STOCKS	PRODUCTION:IMPORTS: TOTAL	FEED	DOMESTIC USE		EXPORTS	TOTAL DISAPPEAR- ANCE	PRIVATELY: HELD 1/ 2/	GOVT.: TOTAL							
				INDUSTRY	AND SEED:											
MILLION BUSHELS																
1974/75	307	601 3/	908	584	82	666	19	685	216 7	223						
1975/76	223	642 1	866	562	85	647	14	661	205 0	205						
1976/77 4/	205	546 1	752	489	88	577	10	587	165 0	165						
1977/78 4/	165	748 1	914	500	90	590	10	600	314 0	314						
1978/79 *	314	700 1	1,015	570	85	655	10	665	350 0	350						
1978/79 **	314	550 1	865	470	85	555	10	565	300 0	300						
ACREAGE		YIELD		SEASONAL PRICES		PRICE SUPPORT OPERATIONS		GOVT.								
BASE OR ALLOTMENT: 5/	SET- ASIDE 5/	PLANTED: GRAIN	HAR- VESTED: FOR	PER HARVESTED ACRE	RECEIVED:		MINNEAPOLIS:PORTLAND:		CHICAGO		NATIONAL : NO. 2 : WHITE : HEAVY :		OR : NO. 2 : WHITE : HEAVY :		SUPPORT: TOTAL PAYMENTS : TARGET : : PRICE : : PANTS 5/	
					BY FARMERS : 6/	NO. 2 WHITE : HEAVY :	NO. 2 WHITE : HEAVY :	NO. 2 WHITE : HEAVY :	NO. 2 WHITE : HEAVY :	NO. 2 WHITE : HEAVY :	NO. 2 WHITE : HEAVY :	NO. 2 WHITE : HEAVY :				
MILLION ACRES		BUSHELS		DOLLARS		PER BUSHEL		DOLLARS		MILLION DOLLARS						
1974/75	---	---	17.0	12.6	47.6	1.53	1.68	1.96	1.75	.54	---	---	---	---	---	
1975/76	---	---	16.5	13.1	49.0	1.46	1.66	1.86	1.54	.54	---	---	---	---	---	
1976/77 4/	---	---	16.7	11.9	45.7	1.56	1.74	1.80	1.71	.72	---	---	---	---	---	
1977/78 4/	---	---	17.8	13.4	55.6	1.10 7/	1.26 7/	1.44 7/	1.35 7/	1.03	---	---	---	---	---	
1978/79 *	---	---			1.00-1.10				1.03						---	
1978/79 **	---	---			1.25-1.45				1.03						---	

1/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 2/ UNCOMMITTED INVENTORY. 3/ LESS THAN 500,000 BUSHELS. 4/ PRE-LIMINARY. 5/ NOT INCLUDED IN THE PROGRAM. 6/ EXCLUDES SUPPORT PAYMENTS. 7/ JUNE-APRIL 1977/78 AVERAGE. \* REFLECTS RELATIVELY FAVORABLE PRODUCTION CONDITIONS WORLDWIDE. \*\* ASSUMES UNFAVORABLE PRODUCTION CONDITIONS WORLDWIDE.

TABLE 8.--BARLEY: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1974-78

[illegible]

11/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 2/ UNCOMMITTED INVENTORY. 3/ PRELIMINARY. 4/ EXCLUDES SUPPORT PAYMENTS. 5/ BEGINNING JUNE 1977 NO. 2 FEED. 6/ 60% TO 70% PLUMP OR BETTER: BEGINNING 1977/78 65% OR BETTER. 7/ AVAILABLE FOR TOTAL FEED GRAINS ONLY. 8/ DISASTER PAYMENTS. 9/ JUNE-APRIL 1977/78 AVERAGE. 10/ DEFICIENCY AND DISASTER PAYMENTS ESTIMATED. \* REFLECTS RELATIVELY FAVORABLE PRODUCTION CONDITIONS WORLDWIDE. \*\* ASSUMES UNFAVORABLE PRODUCTION CONDITIONS WORLDWIDE.

TABLE 9. --CORN: MARKETING YEAR SUPPLY AND DISAPPEARANCE, SPECIFIED PERIODS, 1973-77 1/

YEAR AND PERIODS BEGINNING OCT. 1	SUPPLY				DISAPPEARANCE							ENDING STOCKS			
	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL	FOOD	BEVERAGES	DOMESTIC USE			EX-PORTS	TOTAL DISAPPEARANCE	GOVT. OWNED 2/	PRIVATELY OWNED 3/	TOTAL	
							ALC.	SEED	FEED						
MILLION BUSHELS															
1973/74															
OCT.-DEC.	707.9	5,670.7	0.5	6,379.1	87.7	18.5	---	1,465.5	1,571.6	319.8	1,891.4	4.4	4,483.3	4,487.7	
JAN.-MAR.	4,487.7	---	0.2	4,487.9	87.6	20.5	3.5	1,167.9	1,279.6	338.5	1,618.0	4.1	2,865.8	2,869.9	
APR.-MAY	2,869.9	---	0.1	2,870.0	59.2	14.6	10.6	639.0	723.4	243.2	966.6	2.9	1,900.5	1,903.4	
JUNE-SEPT.	1,903.4	---	0.4	1,903.8	115.9	26.5	3.5	932.4	1,078.3	341.7	1,420.0	---	483.9	483.9	
MKT. YEAR	707.9	5,670.7	1.3	6,379.9	350.4	80.1	17.7	4,204.8	4,652.9	1,243.1	5,896.0	---	483.9	483.9	
1974/75															
OCT.-DEC.	483.9	4,701.4	0.4	5,185.7	91.6	14.8	---	1,166.6	1,272.9	271.9	1,544.8	---	3,640.9	3,640.9	
JAN.-MAR.	3,640.9	---	0.6	3,641.5	92.1	15.6	3.8	922.8	1,034.3	379.3	1,413.7	---	2,227.8	2,227.8	
APR.-MAY	2,227.8	---	0.4	2,228.2	63.1	12.0	11.3	458.0	544.4	178.6	722.9	---	1,505.2	1,505.2	
JUNE-SEPT.	1,505.2	---	0.4	1,505.6	120.0	23.4	3.8	678.3	825.4	318.8	1,144.2	---	361.4	361.4	
MKT. YEAR	483.9	4,701.4	1.8	5,187.0	366.9	65.7	18.8	3,225.6	3,677.1	1,148.5	4,825.6	---	361.4	361.4	
1975/76															
OCT.-DEC.	361.4	5,829.0	0.6	6,190.9	100.2	16.3	---	1,154.1	1,270.7	453.7	1,724.4	---	4,466.6	4,466.6	
JAN.-MAR.	4,466.6	---	0.5	4,467.1	100.4	15.7	4.0	1,108.2	1,228.3	405.9	1,634.2	---	2,833.0	2,833.0	
APR.-MAY	2,833.0	---	0.1	2,833.0	66.8	14.2	12.1	553.8	646.9	319.4	966.3	---	1,866.8	1,866.8	
JUNE-SEPT.	1,866.8	---	0.6	1,867.4	131.4	24.9	4.0	775.6	935.9	532.4	1,468.3	---	399.1	399.1	
MKT. YEAR	361.4	5,829.0	1.8	6,192.2	398.8	71.1	20.2	3,591.6	4,081.7	1,711.4	5,793.1	---	399.1	399.1	
1976/77 4/															
OCT.-DEC.	399.1	6,266.4	0.6	6,666.0	105.1	15.4	---	1,158.0	1,278.5	498.0	1,776.5	---	4,889.5	4,889.5	
JAN.-MAR.	4,889.5	---	0.3	4,889.8	105.3	18.2	4.0	1,069.8	1,197.2	399.5	1,596.7	---	3,293.1	3,293.1	
APR.-MAY	3,293.1	---	0.5	3,293.6	69.8	14.8	11.9	550.3	646.7	282.1	928.8	---	2,364.8	2,364.8	
JUNE-SEPT.	2,364.8	---	1.1	2,365.9	139.3	25.5	4.0	808.5	977.2	504.5	1,481.8	---	884.1	884.1	
MKT. YEAR	399.1	6,266.4	2.5	6,668.0	419.4	73.9	19.8	3,586.6	4,099.7	1,684.2	5,783.8	---	884.1	884.1	
1977/78 4/															
OCT.-DEC.	884.1	6,357.4	0.7	7,242.3	109.2	15.7	---	1,236.0	1,360.9	418.3	1,779.3	0.2	5,462.8	5,463.0	
JAN.-MAR.	5,463.0	---	1.2	5,464.2	110.0	19.4	3.6	1,076.8	1,209.8	414.0	1,623.8	0.2	3,840.2	3,840.4	
APR.-MAY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
JUNE-SEPT.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
MKT. YEAR	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

1/ DATA MAY NOT ADD TO TOTALS DUE TO INDEPENDENT ROUNDING. 2/ UNCOMMITTED INVENTORY. 3/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 4/ PRELIMINARY.



TABLE 10. --SORGHUM: MARKETING YEAR SUPPLY AND DISAPPEARANCE, SPECIFIED PERIODS, 1973-77 1/

YEAR AND PERIODS BEGINNING OCT. 1	SUPPLY			DISAPPEARANCE										ENDING STOCKS		
	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL	DOMESTIC USE						EX-PORTS	TOTAL DISAPPEARANCE	GOVT. OWNED 2/	PRIVATELY OWNED 3/	TOTAL	
					FOOD	FEED	SEED	ALC. REVER- AGES	TOTAL							
MILLION BUSHELS																
1973/74																
OCT.-DEC.	72.7	923.2	4/	995.9	0.5	0.5	---	295.4	296.4	55.6	352.0	---	---	---	643.9	643.9
JAN.-MAR.	643.9	---	---	643.9	0.6	0.4	0.2	195.9	197.1	66.5	263.6	---	---	---	380.3	380.3
APR.-MAY	380.3	---	4/	380.3	0.3	0.6	1.3	98.0	100.2	35.3	135.5	---	---	---	244.8	244.8
JUNE-SEPT.	244.8	---	---	244.8	0.7	1.0	0.7	104.4	106.8	76.8	183.6	---	---	---	61.2	61.2
MKT. YEAR	72.7	923.2	4/	995.9	2.1	2.5	2.2	693.7	700.6	234.1	934.7	---	---	---	61.2	61.2
1974/75																
OCT.-DEC.	61.2	622.7	---	683.9	0.2	0.8	---	257.9	258.9	46.2	305.1	---	---	---	378.9	378.9
JAN.-MAR.	378.9	---	---	378.9	0.2	0.8	0.2	106.6	107.9	62.5	170.4	---	---	---	208.5	208.5
APR.-MAY	208.5	---	4/	208.5	0.2	0.5	1.4	58.0	60.1	17.2	77.3	---	---	---	131.2	131.2
JUNE-SEPT.	131.2	---	4/	131.2	0.3	1.1	0.7	8.1	10.1	86.0	96.1	---	---	---	35.0	35.0
MKT. YEAR	61.2	622.7	4/	684.0	1.0	3.1	2.3	430.6	437.0	212.0	648.9	---	---	---	35.0	35.0
1975/76																
OCT.-DEC.	35.0	753.0	---	788.1	0.3	0.7	---	250.2	251.2	63.4	314.5	---	---	---	473.5	473.5
JAN.-MAR.	473.5	---	---	473.5	0.4	0.6	0.2	156.3	157.6	68.0	225.6	---	---	---	247.9	247.9
APR.-MAY	247.9	---	---	247.9	0.1	0.6	1.4	71.7	73.8	20.4	94.2	---	---	---	153.7	153.7
JUNE-SEPT.	153.7	---	4/	153.7	0.4	0.9	0.7	23.0	25.1	77.2	102.3	---	---	---	51.4	51.4
MKT. YEAR	35.0	753.0	4/	788.1	1.2	2.9	2.3	501.2	507.6	229.0	736.7	---	---	---	51.4	51.4
1976/77 5/																
OCT.-DEC.	51.4	719.8	---	771.2	0.3	0.7	---	215.9	216.9	61.8	278.7	---	---	---	492.5	492.5
JAN.-MAR.	492.5	---	---	492.5	0.4	0.6	0.2	111.6	112.8	83.1	195.9	---	---	---	296.6	296.6
APR.-MAY	296.6	---	4/	296.6	0.2	0.5	1.3	63.7	65.7	34.4	100.1	---	---	---	196.5	196.5
JUNE-SEPT.	196.5	---	---	196.5	0.3	1.1	0.6	36.5	38.5	66.8	105.2	---	---	---	91.3	91.3
MKT. YEAR	51.4	719.8	4/	771.2	1.2	2.9	2.2	427.6	433.8	246.1	679.9	---	---	---	91.3	91.3
1977/78 5/																
OCT.-DEC.	91.3	790.6	---	881.9	0.3	0.8	---	207.5	208.5	56.0	264.5	---	---	---	617.5	617.5
JAN.-MAR.	617.5	---	---	617.5	0.4	0.6	0.2	135.7	137.0	68.1	205.1	---	0.1	---	412.3	412.4
APR.-MAY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
JUNE-SEPT.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MKT. YEAR	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1/ DATA MAY NOT ADD TO TOTALS DUE TO INDEPENDENT ROUNDING. 2/ UNCOMMITTED INVENTORY. 3/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 4/ LESS THAN 50,000 BUSHELS. 5/ PRELIMINARY.

TABLE 11. --OATS: MARKETING YEAR SUPPLY AND DISAPPEARANCE, SPECIFIED PERIODS, 1973-77 1/

YEAR AND PERIODS BEGINNING JUNE 1	SUPPLY				DISAPPEARANCE										ENDING STOCKS			
	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL	DOMESTIC USE						EXPORTS	TOTAL DISAPPEARANCE	GOVT. OWNED 2/	PRIVATELY OWNED 3/	TOTAL			
					FOOD	BEVERAGES	ALCOHOLIC AGES	SEED	FEED	TOTAL								
MILLION BUSHELS																		
1973/74																		
JUNE-SEPT.	463.4	659.1	0.1	1,122.6	13.6	---	---	2.2	279.6	295.3	23.2	318.6	83.0	721.1	804.1			
OCT.-DEC.	804.1	---	0.1	804.2	10.5	---	---	2.2	138.4	151.0	19.3	170.3	30.6	603.3	633.9			
JAN.-MAR.	633.9	---	4/	633.9	10.5	---	---	8.7	178.6	197.8	1.5	199.3	27.8	406.8	434.6			
APR.-MAY	434.6	---	4/	434.6	6.8	---	---	30.6	77.0	114.4	12.7	127.1	25.2	282.3	307.5			
MKT. YEAR	463.4	659.1	0.3	1,122.9	41.3	---	---	43.7	673.6	758.6	56.7	815.4	25.2	282.3	307.5			
1974/75																		
JUNE-SEPT.	307.5	600.7	0.2	908.3	12.8	---	---	2.1	228.4	243.3	11.6	254.9	18.8	634.6	653.4			
OCT.-DEC.	653.4	---	0.1	653.5	10.0	---	---	2.1	135.2	147.3	3.6	150.9	17.7	484.9	502.6			
JAN.-MAR.	502.6	---	4/	502.6	9.8	---	---	8.5	160.5	178.8	0.6	179.4	9.8	313.4	323.2			
APR.-MAY	323.2	---	4/	323.2	6.6	---	---	29.7	61.0	97.3	2.9	100.2	7.0	216.0	223.0			
MKT. YEAR	307.5	600.7	0.3	908.4	39.2	---	---	42.4	585.1	666.7	18.7	685.4	7.0	216.0	223.0			
1975/76																		
JUNE-SEPT.	223.0	642.0	0.3	865.3	13.3	---	---	2.2	228.4	244.5	2.6	247.1	2.6	615.6	618.2			
OCT.-DEC.	618.2	---	0.1	618.3	10.5	---	---	2.2	103.6	116.2	8.1	124.3	---	494.0	494.0			
JAN.-MAR.	494.0	---	0.2	494.2	10.4	---	---	8.6	156.5	175.6	0.7	176.3	---	317.9	317.9			
APR.-MAY	317.9	---	0.1	318.0	6.8	---	---	30.1	73.6	110.5	2.3	112.8	---	205.2	205.2			
MKT. YEAR	223.0	642.0	0.6	865.7	41.6	---	---	43.0	562.2	646.7	13.7	660.5	---	205.2	205.2			
1976/77 5/																		
JUNE-SEPT.	205.2	546.3	0.1	751.7	14.5	---	---	2.3	197.6	214.4	4.9	219.3	---	532.4	532.4			
OCT.-DEC.	532.4	---	0.1	532.6	10.6	---	---	2.3	103.5	116.4	3.7	120.1	---	412.5	412.5			
JAN.-MAR.	412.5	---	0.6	413.1	10.6	---	---	9.1	133.7	153.5	0.5	154.1	---	259.1	259.1			
APR.-MAY	259.1	---	0.6	259.6	6.9	---	---	32.0	55.3	94.2	0.5	94.7	---	164.9	164.9			
MKT. YEAR	205.2	546.3	1.5	753.0	42.7	---	---	45.7	490.1	578.5	9.6	588.1	---	164.9	164.9			
1977/78 5/																		
JUNE-SEPT.	164.9	747.9	1.1	914.0	14.4	---	---	2.3	219.9	236.6	2.7	239.2	---	674.8	674.8			
OCT.-DEC.	674.8	---	0.5	675.2	9.6	---	---	2.3	93.6	105.4	6.8	112.2	---	563.0	563.0			
JAN.-MAR.	563.0	---	0.6	563.6	9.3	---	---	7.3	127.6	144.3	2.0	146.3	---	417.3	417.3			
APR.-MAY																		
MKT. YEAR																		

1/ DATA MAY NOT ADD TO TOTALS DUE TO INDEPENDENT ROUNDING. 2/ UNCOMMITTED INVENTORY. 3/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEL). 4/ LESS THAN 50,000 BUSHELS. 5/ PRELIMINARY.

TABLE 12. --BARLEY: MARKETING YEAR SUPPLY AND DISAPPEARANCE, SPECIFIED PERIODS, 1973-77 1/

YEAR AND PERIODS BEGINNING JUNE 1	SUPPLY			DISAPPEARANCE										ENDING STOCKS		
	BEGINNING STOCKS	PRODUCTION	IMPORTS	DOMESTIC USE										TOTAL DISAPPEARANCE	GOVT. OWNED 2/	PRIVATELY OWNED 3/
				TOTAL	FOOD	ALC. BEVERAGES	SEED	FEED	TOTAL	EXPORTS						
MILLION BUSHELS																
1973/74																
JUNE-SEPT.	191.5	417.4	2.5	611.4	2.9	43.3	1.1	104.9	152.3	38.1	190.4	0.6	420.4	421.0		
OCT.-DEC.	421.0	---	3.9	425.0	2.1	28.1	2.0	50.1	82.4	22.6	105.0	0.6	319.4	320.0		
JAN.-MAR.	320.0	---	1.0	321.0	2.1	29.5	3.4	53.1	88.1	18.1	106.2	0.6	214.2	214.8		
APR.-MAY	214.8	---	1.4	216.2	1.5	23.1	7.7	23.6	55.8	14.1	69.9	0.4	145.9	146.3		
MKT. YEAR	191.5	417.4	8.9	617.8	8.6	124.1	14.2	231.7	378.5	93.0	471.5	0.4	145.9	146.3		
1974/75																
JUNE-SEPT.	146.3	298.7	7.6	452.6	2.9	47.8	1.3	87.2	139.1	10.7	149.8	---	302.8	302.8		
OCT.-DEC.	302.8	---	6.4	309.2	2.1	27.4	2.2	35.9	67.6	13.9	81.5	---	227.8	227.8		
JAN.-MAR.	227.8	---	2.5	230.3	2.1	28.7	3.8	49.2	83.8	12.2	96.1	---	134.2	134.2		
APR.-MAY	134.2	---	3.6	137.8	1.5	22.6	8.5	7.7	40.2	5.4	45.6	---	92.2	92.2		
MKT. YEAR	146.3	298.7	20.2	465.2	8.6	126.5	15.7	179.9	330.7	42.2	372.9	---	92.2	92.2		
1975/76																
JUNE-SEPT.	92.2	374.4	6.8	473.4	2.9	46.2	1.2	78.9	129.2	4.5	133.7	---	339.8	339.8		
OCT.-DEC.	339.8	---	4.6	344.4	2.1	28.5	2.2	28.1	60.9	9.7	70.6	---	273.8	273.8		
JAN.-MAR.	273.8	---	2.7	276.5	2.1	27.9	3.7	55.1	88.8	3.6	92.4	---	184.2	184.2		
APR.-MAY	184.2	---	1.6	185.8	1.5	22.2	8.4	19.9	51.9	6.1	57.9	---	127.9	127.9		
MKT. YEAR	92.2	374.4	15.8	482.4	8.6	124.7	15.5	182.0	330.8	23.8	354.5	---	127.9	127.9		
1976/77 4/																
JUNE-SEPT.	127.9	372.5	5.6	505.9	2.9	48.2	1.4	77.1	129.6	15.0	144.6	---	361.3	361.3		
OCT.-DEC.	361.3	---	1.0	362.3	2.1	28.2	2.5	30.4	63.2	27.8	91.1	---	271.2	271.2		
JAN.-MAR.	271.2	---	2.6	273.9	2.1	30.6	4.3	35.9	72.9	12.9	85.8	---	188.1	188.1		
APR.-MAY	188.1	---	1.6	189.7	1.5	24.5	9.7	17.8	53.5	10.5	64.0	---	125.7	125.7		
MKT. YEAR	127.9	372.5	10.9	511.2	8.6	131.5	17.9	161.2	319.2	66.3	385.5	---	125.7	125.7		
1977/78 4/																
JUNE-SEPT.	125.7	415.8	5.1	546.6	2.9	46.7	1.4	57.4	108.4	34.9	143.3	---	403.3	403.3		
OCT.-DEC.	403.3	---	1.8	405.2	2.1	27.9	2.5	30.2	62.7	14.4	77.1	---	328.0	328.0		
JAN.-MAR.	328.0	---	1.9	329.9	2.1	32.0	4.3	52.5	90.9	3.0	93.9	---	236.0	236.0		
APR.-MAY																
MKT. YEAR																

1/ DATA MAY NOT ADD TO TOTALS DUE TO INDEPENDENT ROUNDING. 2/ UNCOMMITTED INVENTORY. 3/ INCLUDES TOTAL GOVERNMENT LOANS (ORIGINAL AND RESEAL). 4/ PRELIMINARY.

TABLE 13.--FEED GRAINS: FEED YEAR SUPPLY AND DISAPPEARANCE, SPECIFIED PERIODS, 1973-77 1/  
 (CORN, SORGHUM, OATS, BARLEY)

YEAR AND PERIODS BEGINNING OCT. 1	SUPPLY				DISAPPEARANCE							ENDING STOCKS		
	BEGINNING STOCKS	PRODUCTION	IMPORTS	TOTAL	DOMESTIC USE				EXPORTS	TOTAL DISAPPEARANCE	GOVT. OWNED 2/	PRIVATELY OWNED 3/	TOTAL	
					FOOD	ALC. REVER-AGES	SEED	FEED						TOTAL
MILLION METRIC TONS														
1973/74														
OCT.-DEC.	40.7	167.5	0.1	208.3	2.4	1.1	0.1	47.8	51.4	10.3	0.6	145.9	146.5	
JAN.-MAR.	146.5	---	4/	146.5	2.4	1.2	0.3	38.4	42.3	10.7	0.5	93.0	93.5	
APR.-MAY	93.5	---	4/	93.6	1.6	0.9	0.9	20.4	23.8	7.6	0.4	61.8	62.2	
JUNE-SEPT.	62.2	15.2	0.2	77.6	3.2	1.7	0.2	31.5	36.7	11.0	0.3	29.6	29.9	
FEED YEAR	40.7	182.7	0.3	223.7	9.7	4.9	1.5	138.1	154.2	39.6	0.3	29.6	29.9	
1974/75														
OCT.-DEC.	29.9	135.2	0.2	165.3	2.5	1.0	0.1	38.9	42.5	8.4	0.3	114.1	114.4	
JAN.-MAR.	114.4	---	0.1	114.4	2.5	1.0	0.3	29.5	33.4	11.5	0.1	69.4	69.5	
APR.-MAY	69.5	---	0.1	69.6	1.7	0.8	0.9	14.2	17.6	5.1	0.1	46.7	46.8	
JUNE-SEPT.	46.8	17.5	0.2	64.4	3.3	1.6	0.2	22.5	27.6	10.4	4/	26.4	26.4	
FEED YEAR	29.9	152.7	0.5	183.1	10.1	4.5	1.5	105.1	121.2	35.5	4/	26.4	26.4	
1975/76														
OCT.-DEC.	26.4	167.2	0.1	193.7	2.8	1.1	0.1	37.8	41.7	13.5	---	138.6	138.6	
JAN.-MAR.	138.6	---	0.1	138.7	2.8	1.0	0.3	35.6	39.7	12.1	---	86.9	86.9	
APR.-MAY	86.9	---	4/	86.9	1.8	0.9	1.0	17.4	21.0	8.8	---	57.1	57.1	
JUNE-SEPT.	57.1	16.0	0.1	73.3	3.6	1.7	0.2	24.8	30.3	15.9	---	27.0	27.0	
FEED YEAR	26.4	183.2	0.4	210.0	11.0	4.6	1.5	115.6	132.7	50.3	---	27.0	27.0	
1976/77 5/														
OCT.-DEC.	27.0	177.4	4/	204.5	2.9	1.0	0.1	37.1	41.0	14.9	---	148.6	148.6	
JAN.-MAR.	148.6	---	0.1	148.7	2.9	1.1	0.3	32.7	37.1	12.5	---	99.0	99.0	
APR.-MAY	99.0	---	0.1	99.1	1.9	0.9	1.0	16.8	20.6	8.3	---	70.2	70.2	
JUNE-SEPT.	70.2	19.9	0.2	90.3	3.8	1.7	0.2	25.9	31.6	15.3	---	43.4	43.4	
FEED YEAR	27.0	197.4	0.3	224.7	11.5	4.8	1.6	112.5	130.4	51.0	---	43.4	43.4	
1977/78 5/														
OCT.-DEC.	43.4	181.6	0.1	225.0	3.0	1.0	0.1	38.7	42.8	12.5	4/	169.8	169.8	
JAN.-MAR.	169.8	---	0.1	169.8	3.0	1.2	0.3	33.8	38.3	12.3	4/	119.2	119.2	
APR.-MAY														
JUNE-SEPT.														
FEED YEAR														

 1/ DATA MAY NOT ADD TO TOTALS DUE TO INDEPENDENT ROUNDING. 2/ UNCOMMITTED INVENTORY. 3/ INCLUDES TOTAL GOVERNMENT LOANS  
 (ORIGINAL AND RESEAL). 4/ LESS THAN 50,000 METRIC TONS. 5/ PRELIMINARY.

Table 14.--Coarse grains and wheat: Production and trade, selected world areas (July-June) 1976/77-1978/79

	1976/77				1977/78 Preliminary				1978/79 Projected 2/			
	Coarse grain 1/	Wheat	Total		Coarse grain 1/	Wheat	Total		Coarse grain 1/	Wheat	Total	
									Alt. I : Alt. II :	Alt. I : Alt. II :	Alt. I : Alt. II :	
									-- Million metric tons --			
<b>Production</b>												
Canada	21.1	23.6	44.7		22.1	19.7	41.8		21.9	17.3	20.7	42.6
Australia	5.0	11.7	16.7		4.4	9.3	13.7		6.7	5.1	13.8	12.2
Argentina	16.9	11.0	27.9		16.9	5.2	22.1		18.4	14.2	8.3	6.1
South Africa	10.1	2.3	12.4		10.4	1.8	12.2		12.0	8.0	---	---
Thailand	3.0	---	3.0		2.0	---	2.0		3.7	2.0	---	---
Brazil	19.4	3.0	22.4		15.1	2.0	17.1		22.1	18.1	---	---
Western Europe	73.1	51.1	124.2		87.8	48.0	135.8		87.6	84.4	55.0	47.6
USSR	115.0	96.9	211.9		92.5	92.0	184.5		106.7	93.3	110.3	89.7
Eastern Europe	59.5	34.6	94.1		59.3	34.4	93.7		61.7	60.5	35.3	32.7
Others	182.7	123.1	305.8		177.8	114.0	291.8		187.9	182.9	99.5	97.9
Total foreign	505.7	357.3	863.0		488.3	326.5	814.8		523.7	491.7	376.9	330.1
												900.6
												821.8
<b>Exports</b>												
Canada	4.6	12.9	17.5		3.2	16.0	19.2		3.7	4.7	14.0	16.0
Australia	3.3	8.5	11.8		2.2	10.5	12.7		2.1	2.5	7.9	9.1
Argentina	9.5	5.6	15.1		9.8	2.5	12.3		8.8	10.8	2.4	-2.8
South Africa	1.4	---	1.4		2.9	---	2.9		3.2	4.0	---	---
Thailand	2.3	---	2.3		1.0	---	1.0		2.0	2.2	---	---
Brazil	1.3	---	1.3		1.0	---	1.0		---	0.2	---	---
Western Europe	4.5	6.6	11.1		5.3	5.7	11.0		6.1	3.7	5.6	5.8
USSR	2.0	1.0	3.0		1.0	1.0	2.0		1.5	0.5	1.0	1.0
All others	2.7	2.6	5.3		3.5	4.4	7.9		4.1	3.7	4.5	3.9
USA	50.6	25.7	76.3		51.3	29.7	81.0		44.5	53.3	27.0	35.2
World total	82.1	62.9	145.0		81.3	69.8	151.1		76.0	85.6	62.4	73.8
												138.4
												159.4
												3/
<b>Imports</b>												
Western Europe	35.6	5.4	41.0		25.4	7.0	32.4		23.8	28.2	5.2	6.2
From USA	26.5	2.3	28.8		16.4	5.6	22.0		17.7	16.7	5.7	5.7
Japan	16.0	5.5	21.5		16.4	5.6	22.0		17.7	16.7	5.7	5.7
From USA	9.8	3.1	12.9		9.8	3.1	12.9		9.8	3.1	12.9	3.1
USSR	5.5	4.5	10.0		11.0	8.0	19.0		7.2	12.8	5.3	6.7
From USA	4.0	3.0	7.0		4.0	3.0	7.0		4.0	3.0	7.0	3.0
Eastern Europe	8.3	7.0	15.3		8.4	4.6	13.0		6.0	8.0	24.4	4.6
From USA	5.2	1.6	6.8		5.2	1.6	6.8		5.2	1.6	6.8	1.6
All others	16.7	40.5	57.2		20.1	44.6	64.7		21.3	19.9	41.8	50.6
												63.1
												70.5

1/ Includes corn, barley, oats, sorghum, and rye, excluding products. 2/ Alternative I assumes relatively favorable worldwide crop conditions; Alternative II assumes unfavorable worldwide crop conditions. Based on historical differences between the April/May projection and subsequent final outturns, and the judgement of the reviewing analysts, the chances are about 2 out of 3 that the final outcome for each specified country or region will fall within these early seasons alternative projections. 3/ Represents totals of the amounts listed above; because offsetting weather variations, a 2 out of 3 probability range for this total, itself, would be substantially narrower than the range shown here between Alternatives I and II. The same would be the case for aggregate wheat and coarse grains.

Table 15.--Average price received by farmers, United States, by months, 1972-78

Year begin- ning October	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average weighted by sales 1/
----- Dollars -----													
CORN, per bushel													
1972	1.19	1.20	1.42	1.39	1.35	1.37	1.42	1.61	1.99	2.03	2.68	2.15	1.57
1973	2.17	2.18	2.39	2.59	2.76	2.68	2.41	2.45	2.57	2.91	3.37	3.30	2.55
1974	3.45	3.32	3.27	3.07	2.86	2.67	2.68	2.66	2.68	2.72	2.95	2.76	3.03
1975	2.62	2.33	2.37	2.44	2.48	2.50	2.46	2.61	2.74	2.82	2.64	2.60	2.54
1976	2.33	2.02	2.24	2.34	2.34	2.35	2.31	2.25	2.12	1.88	1.63	1.60	2/2.15
1977	1.67	1.88	1.96	2.00	2.03	2.15	2.26						3/2.05
SORGHUM, per 100 pounds													
1972	2.09	2.19	2.72	2.72	2.60	2.60	2.56	2.66	3.10	3.46	3.64	3.87	2.45
1973	3.65	3.66	3.83	4.03	4.38	4.25	3.78	3.59	3.59	4.15	5.07	5.30	3.82
1974	5.78	5.85	5.33	4.96	4.21	4.03	4.15	4.21	4.15	4.25	4.69	4.56	4.96
1975	4.43	4.05	4.00	4.06	4.09	4.14	4.14	4.14	4.29	4.53	4.03	4.20	4.23
1976	3.68	3.30	3.51	3.59	3.51	3.55	3.44	3.18	3.08	2.84	2.63	2.52	2/3.62
1977	2.80	3.03	3.05	3.15	3.20	3.37	3.52						3/3.12
Year begin- ning June	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average weighted by sales 1/
----- Dollars per bushel -----													
OATS													
1972	.666	.655	.623	.645	.671	.700	.806	.811	.776	.771	.774	.796	.725
1973	.904	.855	1.13	1.09	1.14	1.13	1.20	1.32	1.44	1.40	1.24	1.27	1.18
1974	1.30	1.37	1.55	1.57	1.68	1.70	1.70	1.62	1.58	1.46	1.51	1.54	1.53
1975	1.49	1.45	1.44	1.45	1.41	1.40	1.42	1.44	1.46	1.46	1.44	1.47	1.46
1976	1.64	1.64	1.48	1.49	1.46	1.45	1.51	1.58	1.63	1.64	1.64	1.52	2/1.56
1977	1.29	1.02	.905	.938	1.02	1.10	1.12	1.17	1.22	1.16	1.21		2/1.15
BARLEY													
1972	1.09	1.04	.957	1.07	1.17	1.21	1.32	1.42	1.34	1.31	1.31	1.39	1.21
1973	1.55	1.58	2.10	2.16	2.23	2.10	2.19	2.32	2.52	2.61	2.15	2.19	2.13
1974	2.25	2.33	2.78	2.86	3.11	3.41	3.30	3.17	2.89	2.55	2.72	2.75	2.80
1975	2.30	2.35	2.56	2.69	2.68	2.43	2.35	2.31	2.31	2.34	2.31	2.41	2.42
1976	2.60	2.51	2.35	2.33	2.22	2.11	2.08	2.19	2.19	2.25	2.22	2.12	2/2.25
1977	1.93	1.53	1.53	1.69	1.63	1.82	1.79	1.88	1.98	1.89	1.96		2/1.80
Year begin- ning May	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average weighted by sales 1/
----- Dollars per ton -----													
HAY													
1972	31.10	30.90	28.50	29.30	29.80	30.30	31.00	33.00	34.60	35.40	35.40	33.90	31.30
1973	37.50	35.20	36.30	39.00	43.10	46.20	46.80	46.00	47.10	47.10	45.40	44.40	41.60
1974	54.00	47.70	48.20	51.10	51.90	51.50	50.30	50.70	50.10	49.30	49.70	52.40	50.90
1975	56.30	53.60	51.20	51.00	50.30	50.30	50.20	51.60	52.70	54.30	54.10	54.10	52.20
1976	64.80	59.60	59.00	58.70	60.80	60.10	59.00	59.00	60.90	62.70	63.90	63.20	60.30
1977	68.10	61.30	56.80	52.50	50.00	48.20	48.40	49.50	50.50	51.80	51.40	51.40	2/54.00

1/ Includes an allowance for unredeemed loans and purchase agreement deliveries valued at the average loan rate, by States; excludes government payments.

2/ Preliminary.

3/ Forecast; Interagency Commodity Estimates Committee



Table 16.--Cash prices at principal markets, 1977-78

Year begin- ning October	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple average
----- Dollars -----													
CORN, No. 2 Yellow, Chicago (per bushel)													
1972	1.32	1.33	1.57	1.58	1.59	1.59	1.65	2.01	2.42	2.52	2.91	2.47	1.91
1973	2.37	2.50	2.68	2.90	3.13	2.99	2.69	2.70	2.93	3.35	3.63	3.55	2.95
1974	3.74	3.48	3.47	3.19	2.96	2.90	2.96	2.82	2.89	2.95	3.12	2.99	3.12
1975	2.74	2.59	2.59	2.62	2.70	2.68	2.68	2.84	2.96	2.96	2.87	2.77	2.75
1976	2.49	2.33	2.44	2.53	2.54	2.52	2.50	2.41	2.27	2.05	1.78	1.80	2.30
1977	1.84	2.14	2.19	2.19	2.21	2.36	2.51						
CORN, No. 2 Yellow, Omaha (per bushel)													
1972	1.28	1.34	1.49	1.50	1.55	1.49	1.51	1.84	2.25	2.32	2.71	2.37	1.80
1973	2.34	2.40	2.49	2.71	2.95	2.76	2.49	2.51	2.68	3.19	3.55	3.46	2.79
1974	3.63	3.46	3.36	3.07	2.79	2.75	2.85	2.81	2.84	2.92	3.12	2.95	3.05
1975	2.75	2.55	2.56	2.57	2.60	2.62	2.59	2.74	2.86	2.83	2.69	2.59	2.66
1976	2.36	2.17	2.30	2.38	2.38	2.35	2.29	2.21	2.10	1.90	1.66	1.67	2.15
1977	1.79	2.02	2.04	2.02	2.03	2.14	2.25						
SORGHUM, No. 2 Yellow, Kansas City (per cwt.)													
1972	2.17	2.42	2.88	3.06	2.88	2.86	2.83	3.09	3.61	3.93	4.72	4.37	3.24
1973	4.37	4.31	4.37	4.71	4.99	4.64	4.03	3.84	3.99	5.02	5.79	5.64	4.64
1974	6.32	6.10	5.36	4.95	4.55	4.48	4.64	4.60	4.53	4.82	5.13	4.66	5.01
1975	4.53	4.36	4.33	4.36	4.47	4.62	4.47	4.49	4.66	4.73	4.29	4.27	4.46
1976	3.88	3.60	3.77	3.91	3.85	3.75	3.62	3.53	3.28	3.15	2.73	2.78	3.49
1977	3.05	3.40	3.36	3.37	3.49	3.78	3.92						
Year begin- ning June	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
----- Dollars per bushel -----													
OATS, No. 2 Extra Heavy White, Minneapolis													
1972	.70	.69	.70	.71	.76	.81	.91	.88	.84	.84	.86	.91	.80
1973	.93	.93	1.28	1.32	1.26	1.25	1.32	1.55	1.66	1.52	1.26	1.35	1.30
1974	1.43	1.63	1.68	1.71	1.87	1.80	1.74	1.64	1.64	1.49	1.72	1.78	1.63
1975	1.59	1.59	1.70	1.68	1/1.64	1.69	1.65	1.67	1.66	1.64	1.67	1.72	1.66
1976	1.93	1.84	1.67	1.67	1.66	1.62	1.67	1.78	1.80	1.76	1.81	1.68	1.74
1977	1.38	1.15	1.02	1.11	1.17	1.34	1.32	1.32	1.32	1.33	1.40		
BARLEY, No. 3 or Better, Feed, Minneapolis													
1972	1.05	.96	.98	1.11	1.16	1.14	1.27	1.34	1.20	1.19	1.25	1.36	1.17
1973	1.51	1.67	2.12	2.12	2.02	1.80	2.12	2.34	2.51	2.32	1.74	2.10	2.03
1974	2.36	2.36	2.69	2.48	3.07	3.17	2.89	2.82	2.59	2.26	2.24	2.05	2.58
1975	1.67	2.04	2.77	3.00	2.83	2.42	2.23	2.11	2.26	2.36	2.39	2.50	2.38
1976	2.52	2.45	2.48	2.68	2.46	2.21	2.05	2.20	2.35	2.29	2.28	2.13	2.34
1977 2/	1.76	1.63	1.50	1.58	1.66	1.65	1.65	1.65	1.65	1.66	1.90		
BARLEY, No. 3 or Better Malting 70% or Better Plump, Minneapolis													
1972	1.22	1.22	1.21	1.26	1.34	1.34	1.45	1.59	1.58	1.61	1.64	1.66	1.43
1973	1.74	1.82	2.45	2.64	2.64	2.62	2.64	2.76	3.27	3.57	2.98	2.94	2.67
1974	3.11	3.38	3.77	4.00	4.42	4.78	4.65	4.62	4.45	4.15	4.34	4.28	4.16
1975	3.97	3.33	3.65	3.93	3.83	3.56	3.35	3.24	3.21	3.22	3.17	3.22	3.52
1976	3.55	3.59	3.37	3.24	3.21	3.00	2.95	3.00	2.91	2.98	2.91	2.83	3.13
1977 3/	2.38	2.02	1.92	2.15	2.25	2.36	2.32	2.26	2.33	2.32	2.44		

1/ Beginning October 1975 heavy white. 2/ Beginning June 1977, No. 2, Feed. 3/ Beginning October 1977, 65% or better plump.

Source: Grain Market News, AMS, USDA.

Table 17.--Corn, No. 2 Yellow, Chicago: Daily closing cash and December 1978 futures 1/

Dollars per bushel																							
December				January				February				March				April				May			
Date	Cash	Dec. '78 futures	Date	Cash	Dec. '78 futures	Date	Cash	Dec. '78 futures	Date	Cash	Dec. '78 futures	Date	Cash	Dec. '78 futures	Date	Cash	Dec. '78 futures	Date	Cash	Dec. '78 futures			
1	2.17	2.27	2	Holiday		1	2.20	2.26				1	2.22	2.29		3	2.51	2.55	1	2.47	2.42		
2	2.19	2.28	3	2.18	2.27	2	2.21	2.27				2	2.24	2.30		4	2.51	2.56	2	2.45	2.43		
5	2.17	2.26	4	2.18	2.27	3	2.21	2.26				3	2.25	2.33		5	2.54	2.55	3	2.47	2.44		
6	2.19	2.26	5	2.16	2.26	6	2.22	2.26				6	2.25	2.35		6	2.52	2.55	4	2.52	2.48		
7	2.18	2.26	6	2.17	2.27	7	2.21	2.26				7	2.28	2.39		7	2.56	2.57	5	2.54	2.52		
8	2.19	2.25	9	2.18	2.27	8	2.20	2.26				8	2.30	2.40		10	2.58	2.60	8	2.51	2.48		
9	2.20	2.26	10	2.20	2.29	9	2.20	2.27				9	2.30	2.39		11	2.57	2.60	9				
12	2.17	2.21	11	2.19	2.29	10	2.20	2.29				10	2.29	2.38		12	2.55	2.57	10				
13	2.20	2.22	12	2.19	2.31	13	2.21	2.27				13	2.32	2.45		13	2.50	2.51	11				
14	2.18	2.21	13	2.19	2.32	14	2.21	2.27				14	2.35	2.47		14	2.52	2.55	12				
15	2.19	2.21	16	2.16	2.31	15	2.21	2.27				15	2.37	2.50		17	2.53	2.55	15				
16	2.18	2.23	17	2.16	2.28	16	2.20	2.27				16	2.39	2.50		18	2.53	2.57	16				
19	2.19	2.23	18	2.16	2.28	17	2.21	2.26				17	2.46	2.55		19	2.51	2.57	17				
20	2.21	2.26	19	2.17	2.29	20	Holiday					20	2.42	2.51		20	2.49	2.57	18				
21	2.20	2.25	20	2.19	2.30	21	2.21	2.26				21	2.39	2.49		21	2.50	2.55	19				
22	2.21	2.26	23	2.20	2.31	22	2.21	2.28				22	2.41	2.53		24	2.44	2.48	22				
23	2.14	2.26	24	2.19	2.30	23	2.21	2.27				23	2.43	2.56		25	2.51	2.49	23				
26	Holiday		25	2.21	2.30	24	2.21	2.28				24	Holiday			26	2.45	2.44	24				
27	2.19	2.28	26	2.21	2.29	27	2.21	2.28				27	2.48	2.60		27	2.46	2.46	25				
28	2.20	2.28	27	2.22	2.29	28	2.20	2.27				28	2.49	2.59		28	2.49	2.45	26				
29	2.19	2.27	30	2.21	2.27							29	2.44	2.52					29				
30	2.18	2.28	31	2.20	2.26							30	2.44	2.53					30				
												31	2.49	2.60					31				

1/ Continued from previous Feed Situations.

Table 18.--Livestock, poultry and milk-feed price ratios,  
by months, 1971-78

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
beginning October													
HOG/CORN, U.S. Basis 1/													
1971	19.5	19.3	18.2	20.9	23.5	21.2	19.9	21.7	22.7	24.1	24.3	23.0	21.5
1972	23.0	22.3	20.8	22.3	25.4	27.9	24.7	21.9	18.7	20.3	21.0	20.4	22.4
1973	18.8	18.6	16.0	15.5	14.2	13.1	12.7	10.7	9.4	11.8	10.7	10.2	13.5
1974	10.8	11.1	11.7	12.4	13.5	14.6	14.7	17.0	17.7	19.8	19.0	21.2	15.3
1975	22.3	21.1	20.0	19.5	19.3	18.2	19.1	18.2	18.0	16.9	16.1	15.3	18.7
1976	14.1	15.4	16.3	16.2	16.8	15.8	15.6	18.1	19.8	23.9	26.3	25.1	18.6
1977 2/	23.9	20.1	21.1	22.0	23.6	21.8	19.8						
BEEF-STEER/CORN, Omaha 3/													
1971	28.3	29.0	27.6	28.5	29.5	28.6	27.6	28.1	30.8	31.0	29.5	27.1	28.8
1972	27.3	25.1	24.7	27.1	28.1	30.6	29.8	24.9	20.8	20.5	19.5	19.0	24.8
1973	17.9	16.7	15.8	17.4	15.7	15.5	16.7	16.1	14.2	13.7	13.1	12.0	15.4
1974	10.9	10.9	11.1	11.8	12.5	13.1	15.0	17.6	18.2	17.2	15.0	16.6	14.2
1975	17.4	17.7	17.6	16.0	14.9	13.8	16.6	14.8	14.2	13.4	13.8	14.7	15.6
1976	16.1	18.0	17.4	16.1	16.0	15.9	17.5	19.0	19.2	21.5	24.2	24.2	18.8
1977 2/	23.6	20.7	21.1	21.6	22.2	22.7	23.3						
MILK/FEED, U.S. Basis 4/													
1971	1.84	1.88	1.85	1.82	1.81	1.78	1.72	1.69	1.66	1.68	1.72	1.75	1.77
1972	1.77	1.75	1.64	1.59	1.58	1.52	1.51	1.40	1.26	1.35	1.27	1.51	1.51
1973	1.57	1.62	1.57	1.53	1.51	1.49	1.50	1.45	1.37	1.30	1.16	1.22	1.44
1974	1.21	1.23	1.20	1.25	1.29	1.33	1.30	1.30	1.30	1.34	1.36	1.47	1.30
1975	1.56	1.66	1.70	1.65	1.58	1.58	1.53	1.49	1.43	1.44	1.50	1.51	1.55
1976	1.56	1.60	1.55	1.52	1.48	1.47	1.46	1.43	1.49	1.57	1.69	1.80	1.55
1977 2/	1.84	1.75	1.71	1.69	1.70	1.68	1.62						
EGG/FEED, U.S. Basis 5/													
1971	6.9	7.2	8.2	7.1	7.0	7.6	6.5	6.4	6.4	7.0	6.9	7.7	7.1
1972	6.9	8.0	8.7	9.0	7.3	7.7	7.9	6.9	6.4	7.1	8.3	8.6	7.7
1973	8.2	8.6	8.5	8.8	8.4	7.5	7.0	6.2	5.8	6.2	5.7	6.7	7.3
1974	6.5	6.6	7.2	7.2	7.2	7.6	6.5	6.5	6.3	6.4	6.8	7.5	6.9
1975	7.1	8.1	9.0	8.6	8.2	7.4	7.3	7.5	6.8	6.8	7.6	7.7	7.7
1976	7.8	8.7	9.1	8.3	8.2	7.3	6.8	5.9	5.8	6.6	7.2	7.6	7.4
1977 2/	7.0	7.3	7.4	6.7	7.5	7.4	6.8						
BROILER/FEED, U.S. Basis 6/													
1971	2.7	2.7	2.5	2.8	3.1	3.1	2.7	2.8	3.0	3.3	3.0	3.2	2.9
1972	2.9	2.7	2.6	2.9	3.1	3.5	3.9	3.3	2.9	3.4	4.0	3.5	3.2
1973	2.9	2.5	2.3	2.5	2.8	2.7	2.7	2.7	2.5	2.6	2.3	2.6	2.6
1974	2.5	2.6	2.4	2.7	2.9	2.9	2.8	3.1	3.4	3.7	3.6	3.6	3.0
1975	3.5	3.4	3.0	3.1	3.2	3.1	3.0	3.1	2.8	2.8	2.7	2.5	3.0
1976	2.4	2.3	2.2	2.5	2.7	2.7	2.7	2.6	2.7	3.0	2.9	3.1	2.6
1977 2/	3.0	2.6	2.5	2.8	3.0	3.0	3.0						
TURKEY/FEED, U.S. Basis 7/													
1971	4.7	4.8	5.1	4.9	4.8	4.7	4.6	4.5	4.5	4.4	4.4	4.3	4.6
1972	4.3	4.5	4.4	4.0	3.7	4.1	4.8	4.2	3.8	3.9	4.3	4.9	4.2
1973	5.0	5.3	4.8	4.0	3.8	3.8	3.4	3.2	3.1	2.9	2.9	3.0	3.8
1974	3.0	3.3	3.6	3.6	3.7	3.8	3.6	3.8	3.9	4.2	4.2	4.2	3.7
1975	4.3	4.5	4.4	4.0	3.9	4.0	3.9	3.9	3.5	3.3	3.4	3.4	3.9
1976	3.5	3.5	3.7	3.6	3.5	3.6	3.4	3.3	3.5	3.6	3.8	4.0	3.3
1977 2/	4.3	4.4	4.6	4.3	4.2	4.2	4.1						

1/ Number bushels of corn equal in value to 100 lbs. of hog liveweight. 2/ Preliminary. 3/ Based on price of beef-steers 900-1,100 pounds, choice instead of average grade all steers previously published. 4/ Pounds concentrate ration equal in value to one lb. whole milk. 5/ Number of lbs. of laying feed equal in value to one dozen eggs. 6/ Number of lbs. of broiler grower feed equal in value to one lb. broiler liveweight. 7/ Pounds of turkey grower feed equal in value to one lb. turkey liveweight.

Table 19—Corn Belt cattle feeding  
Selected expenses at current rates<sup>1</sup>

Purchased during Marketed during	Jan. 77 July 77	Feb. Aug.	Mar. Sept.	Apr. Oct.	May Nov.	June Dec.	July Jan. 78	Aug. Feb.	Sept. Mar.	Oct. Apr.	Nov. May	Dec. June	Jan. 78 July	Feb. Aug.	Mar. Sept.	Apr. Oct.
Dollars per head																
Expenses:																
600 lb. feeder steer .....	218.94	227.16	233.70	250.86	250.32	239.40	243.84	251.94	245.10	244.92	239.64	247.98	264.42	285.60	312.00	330.48
Transportation to feedlot (400 miles) .....	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28
Corn (45 bu.) .....	105.30	104.85	104.40	99.45	94.50	86.40	86.40	72.90	70.20	71.10	87.30	89.55	88.20	88.65	94.95	101.70
Silage (1.7 tons) .....	38.05	38.39	38.45	36.75	34.63	32.71	30.97	27.30	26.16	26.20	29.60	30.74	30.97	31.47	31.40	32.25
Protein supplement (270 lb.) .....	29.02	28.76	29.84	31.86	32.40	31.05	27.81	25.92	24.84	24.57	26.19	26.86	26.32	25.11	26.60	27.54
Hay (400 lb.) .....	12.95	13.25	13.30	12.15	11.30	10.60	10.45	9.65	9.20	9.10	9.35	9.85	10.20	10.50	9.60	9.30
Labor (4 hours) .....	9.84	10.24	10.24	10.24	10.72	10.72	10.72	10.32	10.32	10.32	10.80	10.80	10.80	11.68	11.98	11.68
Management <sup>2</sup> .....	4.92	5.12	5.12	5.12	5.36	5.36	5.36	5.16	5.16	5.16	5.40	5.40	5.40	5.84	5.84	5.84
Vet medicine <sup>3</sup> .....	3.16	3.12	3.22	3.25	3.27	3.25	3.24	3.22	3.22	3.21	3.23	3.24	3.34	3.37	3.42	3.46
Interest on purchase (6 mo.) .....	9.85	10.22	10.52	11.29	11.26	10.77	10.97	11.34	11.03	11.02	11.07	11.16	11.90	12.85	14.04	14.87
Power, equip, fuel, shelter, depreciation .....	14.75	14.88	15.02	15.17	15.23	15.17	15.12	15.04	15.02	14.99	15.06	15.10	15.56	15.72	15.94	16.13
Death loss (1% of purchase) .....	2.19	2.27	2.34	2.51	2.50	2.39	2.44	2.52	2.45	2.41	2.45	2.48	2.64	2.86	3.12	3.30
Transportation (100 miles) .....	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31
Marketing expenses .....	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
Miscellaneous & indirect costs <sup>4</sup> .....	6.38	6.44	6.49	6.56	6.59	6.56	6.54	6.50	6.49	6.48	6.51	6.53	6.73	6.80	6.89	6.98
Total .....	466.29	475.71	484.03	501.10	493.97	473.42	464.80	452.75	440.13	440.46	457.20	470.63	487.42	511.39	546.42	574.47
Dollars per cwt.																
Selling price/cwt. required to cover feed and feeder costs (1050 lb.) .....	38.50	39.28	40.01	41.53	40.77	38.88	38.04	36.92	35.76	35.80	37.34	38.57	40.01	42.03	45.20	47.74
Selling price/cwt. required to cover all costs (1050 lb.) .....	44.41	45.31	46.10	47.72	47.04	45.09	44.27	43.12	41.92	41.95	43.54	44.82	46.42	48.70	52.04	54.71
Feed cost per 100 lb. gain .....	41.18	41.17	41.43	41.15	39.51	37.52	34.58	30.17	28.98	29.10	33.88	34.89	34.60	34.61	36.12	37.93
Choice steers, Omaha .....	40.94	40.11	40.35	42.29	41.83	43.13	43.62	45.02	48.66	52.52						
Net margin/cwt. ....	-3.47	-5.20	-5.75	-5.43	-5.21	-1.96	-0.65	+1.90	+6.74	+10.57						
Prices																
Feeder steer Choice (600-700 lb.) Kansas City/cwt.) .....	36.49	37.86	38.95	41.81	41.72	39.90	40.64	41.99	40.85	40.82	39.94	41.33	44.07	47.60	52.00	55.08
Corn/bu. ....	2.34	2.33	2.33	2.32	2.21	2.10	1.92	1.62	1.56	1.58	1.94	1.99	1.96	1.97	2.11	2.26
Hay/ton <sup>5</sup> .....	64.75	66.25	66.50	60.75	56.50	53.00	52.25	48.25	46.00	45.50	46.75	49.25	51.00	52.50	48.00	46.50
Corn silage /ton <sup>5</sup> .....	22.38	22.58	22.62	21.62	20.37	19.24	18.22	16.06	15.39	15.41	17.41	18.08	18.22	18.51	18.47	18.97
32-36% Protein supp./cwt. <sup>4</sup> .....	10.75	10.65	11.05	11.80	12.00	11.50	10.30	9.60	9.20	9.10	9.70	9.75	9.75	9.90	9.85	10.20
Farm Labor/hour <sup>6</sup> .....	2.46	2.56	2.56	2.56	2.68	2.68	2.68	2.58	2.58	2.58	2.70	2.70	2.70	2.92	2.92	2.92
Interest annual rate .....	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Transportation rate/cwt. 100 mile .....	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
Marketing expenses <sup>5</sup> .....	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
Index of prices paid by farmers (1910-14=100) .....	673	679	685	692	695	692	690	686	685	684	687	689	710	717	727	736

<sup>1</sup> Represents only what expenses would be if all selected items were paid for during the period indicated. The feed ration and expense items do not necessarily coincide with experience of individual feeders. For individual use, adjust expenses and prices for management, production level and locality of operation. Assumes one hour at twice the labor rate. Adjusted monthly by the index of prices paid by farmers for commodities, services, interest, taxes and wage rates. <sup>2</sup> Average price received by farmers in Iowa plus commission fees at a Midwest terminal market. <sup>3</sup> Corn silage price derived from an equivalent price of 5 bushels corn and 330 lb. hay. <sup>4</sup> Average price paid by farmers in Iowa and Illinois. <sup>5</sup> Converted from cents/mile for a 44,000 pound haul.

Table 20—Corn Belt hog feeding<sup>1</sup>

Purchased during Marketed during	Selected costs at current rates <sup>2</sup>															
	Jan. 77 May 77	Feb. June	Mar. July	Apr. Aug.	May Sept.	June Oct.	July Nov.	Aug. Dec.	Sept. Jan. 78	Oct. Feb.	Nov. Mar.	Dec. Apr.	Jan. 78 May	Feb. June	Mar. July	Apr. Aug.
Dollars per head																
Expenses:																
40 lb. feeder pig .....	23.84	33.24	38.58	41.49	40.91	35.18	36.90	39.84	37.46	34.94	32.32	30.38	35.88	44.12	51.63	54.57
Corn (11 bu.) .....	25.74	25.63	25.63	25.52	24.31	23.10	21.12	17.82	17.16	17.38	21.34	21.89	21.56	21.67	23.21	24.86
Protein supplement (130 lb.) .....	18.07	17.94	19.37	20.74	21.12	20.28	17.10	15.92	15.54	15.08	15.92	15.92	16.12	15.54	16.18	17.10
Labor & management (1.3 hrs.) .....	6.40	6.66	6.66	6.66	6.97	6.97	6.97	6.71	6.71	6.71	7.02	7.02	7.02	7.59	7.59	7.59
Vet medicine <sup>3</sup> .....	1.60	1.61	1.62	1.64	1.65	1.64	1.64	1.63	1.62	1.62	1.63	1.63	1.68	1.70	1.72	1.74
Interest on purchase (4 mo.) .....	.72	1.00	1.16	1.24	1.23	1.06	1.11	1.20	1.12	1.05	.97	.91	1.08	1.32	1.55	1.64
Power, equip., fuel, shelter, depreciation <sup>3</sup> .....	3.88	3.91	3.95	3.99	4.00	3.99	3.97	3.95	3.95	3.94	3.96	3.97	4.09	4.13	4.19	4.24
Death loss (4% of purchase) .....	.95	1.33	1.54	1.66	1.64	1.41	1.48	1.59	1.50	1.40	1.29	1.22	1.44	1.76	2.07	2.18
Transportation (100 miles) .....	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48
Marketing expenses .....	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Miscellaneous & indirect costs <sup>3</sup> .....	.40	.40	.40	.41	.41	.41	.41	.40	.40	.40	.41	.41	.42	.42	.43	.43
Total .....	83.22	93.34	100.53	104.97	103.86	95.66	92.32	90.68	87.08	84.14	86.48	84.97	90.91	99.87	110.19	115.97
Dollars per cwt.																
Selling price/cwt. required to cover feed and feeder costs (220 lb.) .....	30.75	34.91	37.99	39.89	39.25	35.71	34.15	33.45	31.89	30.64	31.63	31.00	33.44	36.97	41.37	43.88
Selling price/cwt. required to cover all costs (220 lb.) .....	37.83	42.43	45.70	47.71	47.21	43.48	41.96	41.22	39.58	38.25	39.31	38.62	41.32	45.40	50.09	52.71
Feed cost per 100 lb. gain .....	24.34	24.21	25.00	25.70	25.24	24.10	21.23	18.74	18.17	18.03	20.70	21.01	20.93	20.67	21.88	23.31
Barrows and gilts <sup>7</sup> markets/cwt. ....	41.79	43.86	45.76	44.38	41.40	40.83	39.33	43.99	45.99	48.83	46.04					
Net margin/cwt. ....	+3.96	+1.43	+0.06	-3.33	-5.81	-2.65	-2.63	+2.77	+6.41	+10.58	+6.73					
Prices:																
40 lb. feeder pig (So. Missouri) .....	23.84	33.24	38.58	41.49	40.91	35.18	36.90	39.84	37.46	34.94	32.32	30.38	35.88	44.12	51.63	54.57
Corn <sup>4</sup> (bu.) .....	2.34	2.33	2.33	2.32	2.21	2.10	1.92	1.62	1.56	1.58	1.94	1.99	1.96	1.97	2.11	2.26
38-42% protein supp. <sup>5</sup> \$/cwt. ....	13.90	13.80	14.90	15.95	16.25	15.60	13.15	12.25	11.95	11.60	12.25	12.25	12.40	11.95	12.45	13.15
Labor and management <sup>6</sup> \$/hr. ....	4.92	5.12	5.12	5.12	5.36	5.36	5.36	5.16	5.16	5.16	5.40	5.40	5.40	5.84	5.84	5.84
Interest rate (annual) .....	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Transportation rate/cwt. (100 miles) <sup>8</sup> .....	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
Marketing expenses <sup>8</sup> .....	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Index of prices paid by farmers (1910-14=100) .....	673	679	685	692	695	692	690	686	685	684	687	689	710	717	727	736

<sup>1</sup> Although a majority of hog feeding operations in the Corn Belt are from farrow to finish, relative fattening expenses will be similar. <sup>2</sup> Represents only what expenses would be if all selected items were paid for during the period indicated. The feed rations and expense items do not necessarily coincide with the

experience of individual feeders. For individual use, adjust expenses and prices for management, production level, and locality of operation. <sup>3</sup> Adjusted monthly by the index of prices paid by farmers for commodities, services, interest, taxes and wage rates. <sup>4</sup> Average price received by farmers in Iowa and Illinois. <sup>5</sup> Average prices paid by farmers in Iowa and Illinois. <sup>6</sup> Assumes an owner-operator receiving twice the farm labor rate. <sup>7</sup> Converted to cents/cwt. from cents/mile for a 44,000 pound haul. <sup>8</sup> Yardage plus commission fees at a midwest terminal market.

Table 21.--High-protein feed: Quantity available for feeding and high-protein animal units, 1970-77 1/

Year beginning October	Quantity available for feeding (in terms of 44% protein soybean meal equivalent)				High-protein animal units	Per animal unit
	Oilseed meal	Animal protein	Grain protein*	Total		
	----- 1,000 short tons -----				Million	Pounds
1970	15,227	3,539	1,095	19,861	107.6	369
1971	15,093	3,616	1,008	19,717	107.2	368
1972	14,131	3,059	1,134	18,324	105.5	347
1973	15,799	3,012	1,202	20,013	104.1	384
1974	14,250	3,050	1,125	18,425	96.6	381
1975	17,004	3,186	1,231	21,421	100.7	425
1976 2/	15,574	3,254	1,102	19,930	102.9	387
1977 3/	18,235	3,186	894	22,315	106.2	420

1/ Excludes urea and other nitrogenous compounds.

2/ Preliminary.

3/ Forecast.

Table 22.--Processed feeds: Estimated use for feed 1970-77 1/

Feed	Year beginning October							
	1970	1971	1972	1973	1974	1975	1976 2/	1977 3/
	- - - - 1,000 short tons - - - -							
HIGH-PROTEIN								
Oilseed meal								
Soybean 4/	13,467	13,173	11,972	13,854	12,552	15,613	14,056	16,500
Cottonseed	1,693	1,885	2,225	2,096	1,846	1,266	1,556	1,950
Linseed	258	264	212	184	94	87	129	100
Peanut	173	174	180	130	151	313	203	100
Copra	99	100	100	---	---	---	---	---
Total	15,690	15,596	14,689	16,264	14,643	17,279	15,944	18,650
Animal proteins								
Tankage and meat meal	2,039	1,880	1,739	1,854	1,981	2,001	2,200	2,300
Fish meal and solubles	609	752	462	350	444	508	405	300
Commercial dried milk products	260	330	330	315	5/150	162	160	120
Noncommercial milk products	330	310	350	350	5/186	192	190	195
Total	3,233	3,271	2,881	2,869	2,761	2,863	2,955	2,915
Grain protein feeds								
Gluten feed and meal	1,235	1,067	1,262	1,361	1,340	1,477	1,038	950
Brewers' dried grains	361	369	361	348	346	321	296	275
Distillers' dried grains	372	404	428	458	339	400	374	400
Total	1,979	1,840	2,051	2,167	2,025	2,198	1,708	1,625
OTHER								
Wheat millfeeds	4,499	4,364	4,327	4,332	4,482	4,667	4,516	4,600
Rice millfeeds	436	479	442	467	576	547	602	600
Dried and molasses beet pulp	1,509	1,570	1,566	1,375	1,325	1,860	1,800	1,500
Alfalfa meal	1,584	1,568	1,799	1,550	1,572	1,569	1,203	1,400
Fats and oils	570	631	528	546	638	698	723	750
Molasses, inedible	3,550	3,725	3,930	3,650	3,360	3,950	3,750	3,700
Miscellaneous byproduct feeds 6/	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
Total	13,248	13,437	13,692	13,020	13,053	14,391	13,694	13,650
Grand Total	34,155	34,154	33,313	34,320	32,482	36,731	34,301	36,840

1/ Adjusted for stocks, production, foreign trade and nonfeed uses where applicable.

2/ Preliminary.

3/ Forecast.

4/ Includes use in edible soy products and shipments to U.S. territories.

5/ Beginning 1974 not comparable with earlier years.

6/ Allowance for hominy feed, oat millfeeds and screenings.





Table 24.--Market trends, selected feeds and corn products

Item	Unit	1977					1978				
		Oct.-Sept., 1976/77	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. Prel.	May	June
WHOLESALE, MOSTLY BULK 1/											
Soybean meal, 44%, solvent, Decatur	Dol./ton	200	135	162	160	162	153	179	173		
Soybean meal, 49-50%, solvent, Decatur 2/	"	219	151	178	175	175	166	193	189		
Cottonseed meal, 41%, expeller, Memphis	"	176	121	153	141	148	149	131	131		
Linseed meal, 34%, solvent, Minneapolis	"	157	142	150	136	133	116	136	145		
Peanut meal, 50%, S.E. mills	"	207	---	---	---	---	---	182	173		
Meat meal, 50%, Chicago	"	221	178	206	185	185	183	234	204		
Fishmeal, 65%, domestic, East Coast	"	397	342	353	364	365	362	378	395		
Gluten feed, 21%, Chicago	"	107	78	90	103	102	92	89	91		
Gluten meal, 60%, Chicago	"	267	183	215	244	250	250	249	246		
Brewers' dried grains, 24%, Chicago	"	113	89	98	108	101	90	93	88		
Distillers' dried grains, 28%, Cincinnati	"	132	112	117	123	125	124	124	123		
Feather meal, Jackson, Mississippi	"	254	207	218	236	260	255	261	273		
Wheat bran, Kansas City	"	82	58	82	77	65	76	82	58		
Wheat middlings, Kansas City	"	82	58	82	77	65	76	82	58		
Rice bran, Arkansas	"	65	43	63	69	68	68	64	48		
Hominy feed, Illinois Points	"	74	62	67	73	68	70	72	73		
Alfalfa meal, 17%, dehydr., Kansas City	"	95	68	71	74	73	73	81	83		
Cane molasses, New Orleans	"	45	36	36	38	40	40	40	41		
Molasses beet pulp, Los Angeles	"	98	83	85	89	93	97	102	110		
Animal fat, Chicago	Cts./lb.	14.1	12.7	13.3	13.5	13.9	14.8	15.8	16.2		
Urea, 42%, N., Fort Worth	Dol./ton	143	144	144	144	144	144	144	144		
Corn, No. 2, white, Kansas City	Dol./lb.	291	255	305	345	363	371	365	331		
PRICES PAID, U.S. BASIS 3/											
Soybean meal, 44%	Cts./cwt.	13.11	10.70	11.00	11.30	11.30	10.90	11.30	11.90		
Cottonseed meal, 41%	"	11.75	10.00	10.00	10.40	10.40	10.50	10.50	10.60		
Wheat bran	"	7.69	6.88	6.93	7.20	7.33	7.39	7.40	7.45		
Wheat middlings	"	7.55	6.72	6.82	7.08	7.31	7.31	7.31	7.44		
Broiler grower feed	Dol./ton	174	153	159	160	162	164	167	169		
Laying feed	"	156	135	141	145	147	146	149	154		
Turkey grower feed	"	185	168	175	177	177	177	179	183		
Chick starter	"	179	158	164	166	169	166	170	175		
Dairy feed, 16%	"	144	125	129	135	136	134	135	137		
Beef cattle concentrate, 32-36%	Dol./cwt.	9.35	8.20	8.52	8.76	8.81	8.55	8.71	8.89		
Hog concentrate, 38-42%, Protein	"	13.72	11.60	12.10	12.20	12.40	11.90	12.40	13.00		
Alfalfa hay, baled	Dol./ton	76	67	68	68	68	69	69	68		
Stock salt	Dol./cwt.	*3.44	3.60	3.65	3.69	3.70	3.74	3.81	3.86		
CORN PRODUCTS, WHOLESALE 4/											
Corn meal, New York	"										
White	Dol./cwt.	11.10	11.01	12.00	12.00	12.00	12.00	12.62	12.94		
Yellow	"	8.78	8.09	8.52	8.55	8.42	8.58	8.91	9.23		
Grits (brewers), New York	"	7.65	6.99	7.18	7.27	7.16	7.32	7.39	7.94		
Syrup, Chicago West	Cts./lb.	7.17	6.12	6.12	6.15	6.15	6.15	6.15	6.58		
Sugar (dextrose), Chicago West	"	13.41	13.38	13.50	14.06	14.15	14.15	14.15	14.65		
High-fructose (dry weight tank car), Chicago West	"	12.31	12.11	12.70	13.10	12.95	12.70	10.94	11.65		
1/ Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 2/ High protein beginning January 77. 3/ Agricultural Prices, SRS, USDA. 4/ Milling and Baking News, Kansas City, Missouri. *10-month average.											

1/ Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 2/ High protein beginning January 1977. 3/ Agricultural Prices, SRS, USDA. 4/ Milling and Baking News, Kansas City, Missouri. \*10-month average.

# OTHER PERTINENT STATISTICS

## Selected livestock and poultry numbers

		1976	1977	Change
		Million head	Percent	
Hogs and Pigs, U.S. ....	June 1	53.9	54.5	+1
Cattle U.S. ....	July 1			
On feed .....		10.1	9.8	-3
Dairy cows .....		11.1	11.0	-1
Other cattle .....		112.6	109.4	-3
Total .....		133.7	130.2	-3
Hens and pullets <sup>1</sup> ....	July 1	268	265	-1
Broilers slaughtered <sup>2</sup> ..	July-Sept.	865	884	+2
Hogs and pigs (14 States) .....	Sept. 1	48.9	50.0	+2
Cattle on feed (23 States) .....	Oct. 1	9.3	9.8	+5
Hens and pullets <sup>1</sup> ....	Oct. 1	274	280	+2
Broilers slaughtered <sup>2</sup> .....	Oct.-Dec.	780	798	+2
Hogs and pigs U.S. ....	Dec. 1	54.9	57.6	+5
		1977	1978	Change
		Million head	Percent	
Cattle U.S. ....	Jan. 1			
On feed .....		12.6	13.5	+7
Dairy cows .....		11.0	10.9	-1
Other cattle .....		99.2	91.9	-7
Total .....		122.8	116.3	-5
Hens and pullets (laying age) .....	Jan. 1	280	288	+3
Broilers slaughtered <sup>2</sup> ..	Jan.-Mar.	782	841	+8
Hogs and Pigs (14 States) .....	Mar. 1	44.1	44.7	+1
Cattle on feed (23 States) .....	Apr. 1	10.6	11.7	+10
Hens and pullets <sup>1</sup> ....	Apr. 1	273	277	+1
Broilers placed for marketing in .....	Apr.-June	903	942	+4

<sup>1</sup> Laying age, <sup>2</sup> Under Federal inspection.

## Meat, milk and egg production

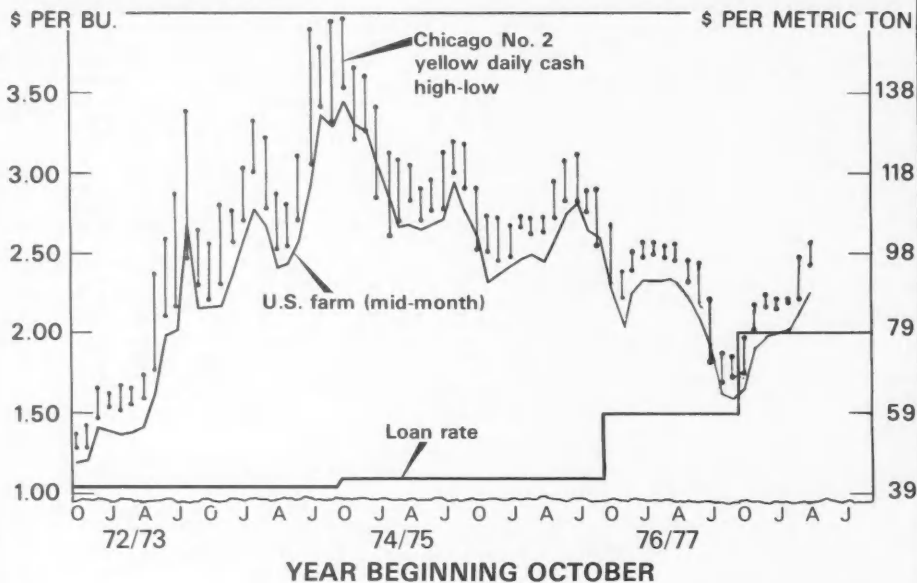
Period	Fed beef <sup>1</sup>	Pork	Broilers and turkeys	Milk	Eggs
	Mil. lb.		Bil. lb.	Mil. lb.	
1975/76					
Oct.-Dec. ....	3,334	2,896	2,627	27.4	2,131
Jan.-Mar. ....	4,258	2,958	2,324	29.2	2,122
Apr.-May ....	2,688	1,929	1,674	21.6	1,410
June-Sept. ....	5,500	3,932	4,090	41.0	2,784
Total .....	15,780	11,715	10,715	119.2	8,447
1976/77					
Oct.-Dec. ....	3,842	3,669	2,850	28.6	2,123
Jan.-Mar. ....	4,340	3,293	2,365	29.8	2,078
Apr.-May ....	2,796	2,164	1,744	22.1	1,415
June-Sept. ....	5,537	4,096	4,116	42.0	2,767
Total .....	16,515	13,222	11,075	122.5	8,383
1977/78					
Oct.-Dec. ....	4,134	3,500	2,894	29.0	2,220
Jan.-Mar. ....	4,582	3,243	2,555	29.9	2,156

<sup>1</sup> Estimated from Commercial Slaughter.

## Feed grains and soybean plantings

Crop of—	Prospective		June 1 forecast	Jan. 1 (following year)
	Jan. 1	April 1		
	Million acres			
Corn				
1974 .....	78.8	78.8	77.7	77.7
1975 .....	77.4	75.3	77.5	77.9
1976 .....	80.8	82.7	84.1	84.1
1977 .....	84.5	83.9	82.7	82.7
1978 .....	80.9	80.2		
Sorghum				
1974 .....	19.6	19.0	17.8	17.7
1975 .....	19.4	18.9	18.2	18.3
1976 .....	18.6	17.9	18.4	18.6
1977 .....	17.1	16.5	17.4	17.0
1978 .....	17.5	15.9		
Oats				
1974 .....	19.0	18.9	18.3	18.0
1975 .....	17.5	18.2	17.4	17.4
1976 .....	17.1	16.8	17.6	17.5
1977 .....	17.8	18.2	18.5	17.8
1978 .....	17.6	16.4		
Barley				
1974 .....	9.6	9.5	9.2	9.1
1975 .....	9.8	10.2	9.6	9.5
1976 .....	9.5	9.2	9.2	9.3
1977 .....	10.7	11.0	10.4	10.6
1978 .....	10.6	10.0		
Total Feed grains				
1974 .....	127.0	126.2	123.0	122.6
1975 .....	124.1	122.6	122.7	123.1
1976 .....	126.0	126.6	129.3	129.5
1977 .....	130.2	129.6	129.0	128.1
1978 .....	126.6	122.6		
Soybeans				
1974 .....	55.4	55.0	53.4	53.6
1975 .....	57.1	56.6	54.6	54.6
1976 .....	50.9	49.3	49.0	50.3
1977 .....	53.1	55.7	59.0	59.1
1978 .....	64.0	63.7		

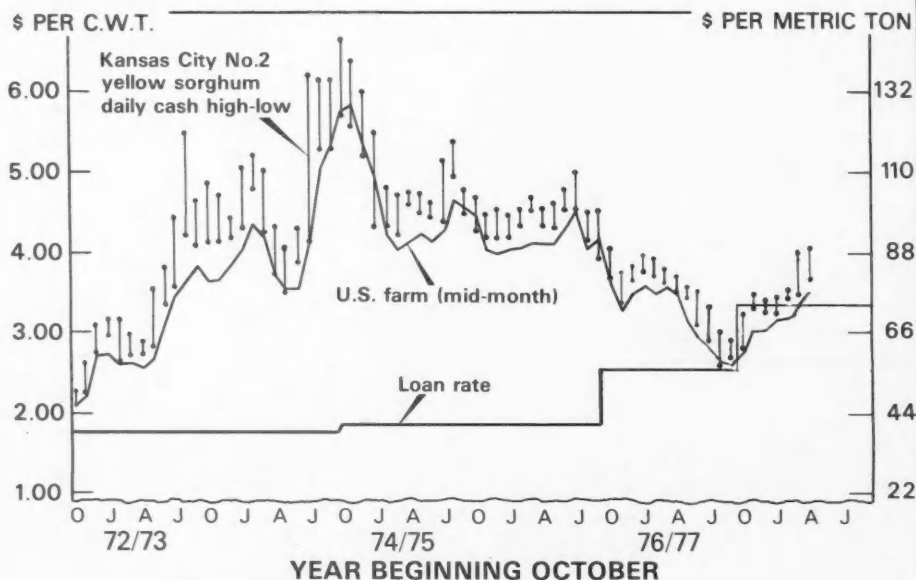
## CORN PRICES



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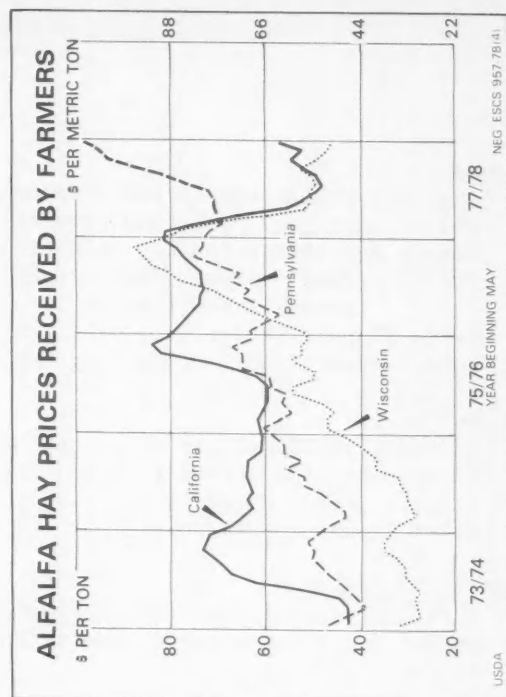
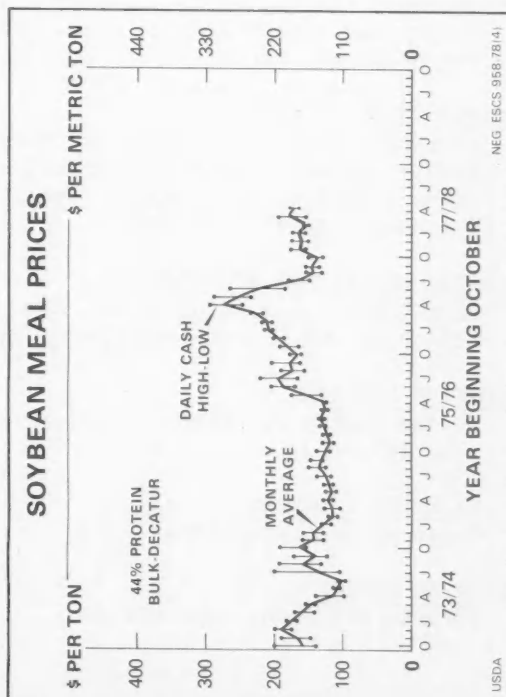
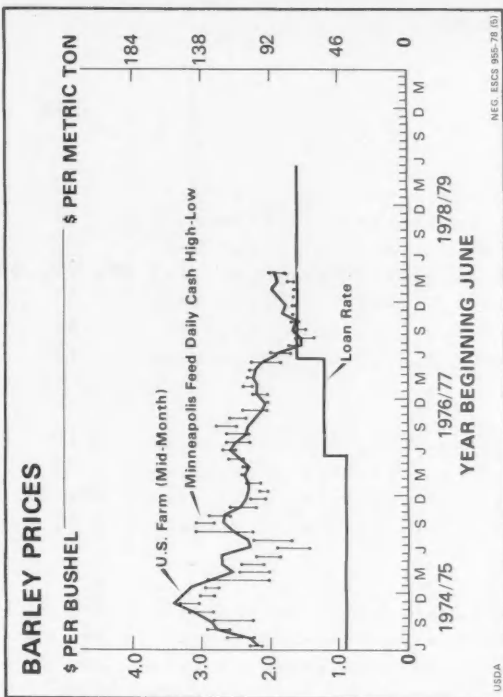
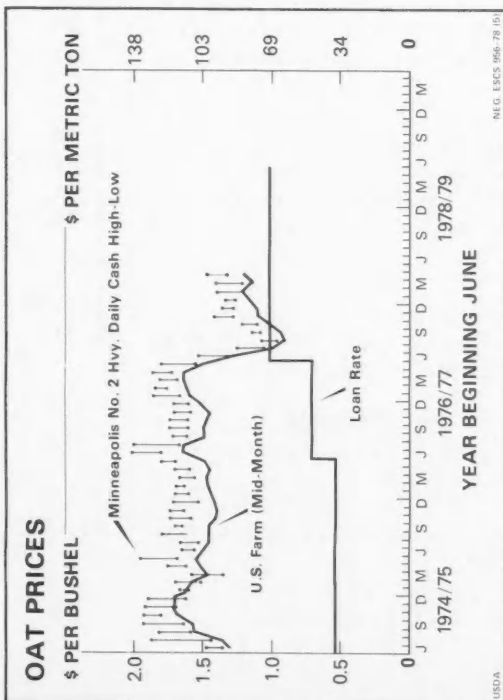
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## SORGHUM PRICES



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Table 25.--Feed grains: Price support activity, cumulative, 1977 crop

Item	Unit	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<b>CORN - Loan \$2.00</b>													
Placed under loan	Mil. bu.	---	3	31	190	518	710	903	967	1,007	1,018		
Redeemed by farmers	"	---	1/	1/	1/	5	14	33	50	92	158		
Placed in reserve 2/	"	---	---	---	---	---	---	---	---	---	2		
Net under loan	"	---	3	31	190	513	696	870	917	915	858		
Farm price	Dol./bu.	1.88	1.63	1.60	1.67	1.88	1.96	2.00	2.03	2.15	2.26		
<b>SORGHUM - Loan \$1.90</b>													
Placed under loan	Mil. bu.	3	22	47	82	132	157	188	198	203	204		
Redeemed by farmers	"	1/	1/	1/	1/	2	5	11	15	28	59		
Placed in reserve 2/	"	---	---	---	---	---	---	---	---	---	1		
Net under loan	"	3	22	47	82	130	152	177	183	175	144		
Farm price	Dol./bu.	1.60	1.47	1.41	1.57	1.70	1.71	1.76	1.79	1.89	1.97		
<b>OATS - Loan \$1.03</b>													
Placed under loan	Mil. bu.	8	35	48	55	59	62	65	67	73	76		
Redeemed by farmers	"	1/	1/	1/	1	1	2	4	5	8	11		
Placed in reserve 2/	"	---	---	---	---	---	---	---	---	10	18		
Net under loan	"	8	35	48	54	58	60	61	62	55	47		
Farm price	Dol./bu.	1.02	.91	.94	1.02	1.10	1.12	1.17	1.22	1.16	1.21		
<b>BARLEY - Loan \$1.63</b>													
Placed under loan	Mil. bu.	6	28	45	54	61	65	71	73	78	82		
Redeemed by farmers	"	1/	1/	1/	1	2	4	7	9	13	18		
Placed in reserve 2/	"	---	---	---	---	---	---	---	---	7	15		
Net under loan	"	6	28	45	53	59	61	64	64	58	49		
Farm price	Dol./bu.	1.53	1.53	1.69	1.63	1.82	1.79	1.88	1.98	1.89	1.96		
<b>TOTAL FEED GRAINS</b>													
Placed under loan	Mil. MT	.3	1.8	3.7	8.9	18.7	24.3	30.2	32.1	33.5	33.9		
Redeemed by farmers	"	3/	3/	3/	.1	.2	.6	1.3	1.9	3.4	6.1		
Placed in reserve 2/	"	---	---	---	---	---	---	---	---	.3	.6		
Net under loan	"	.3	1.8	3.7	8.8	18.5	23.7	28.9	30.2	29.8	27.2		

1/ Less than 500,000 bushels.

2/ Farmers could begin to place oats and barley in the Grain Reserve Program on March 1; corn and sorghum on May 1.

3/ Less than 50,000 metric tons.

\* As of May 3, 1978.

Table 26.--Principal Features of Voluntary Feed Grain and Wheat Price and Income Support Programs, 1977 and 1978 Crops

Item	Agriculture and Consumer Protection Act of 1973 (applicable to 1974-77 crops)		Food and Agriculture Act of 1977 (applicable to 1978-81 crops)	
	1977 crop		1978 crop	
National allotment or national program acreage	Allotment		Program acreage (preliminary)	
Feed grains Mil. acres	89.0		Corn 67.6, sorghum 13.7 and barley 7.4	
Wheat "	62.2		Wheat 53.2	
Program yields				
Corn Bu. per acre	90.8		To be announced	
Sorghum "	53.5			
Barley "	44.5			
Wheat "	32.0			
Set-aside acreage	None required for 1974-77 crops. When required : in earlier years, program participants set : aside a specified percentage of farm's crop : allotment or base acreage.		Set-aside based on acreage planted for 1978 harvest. Participants must set aside cropland equal to 10% of their 1978 corn, sorghum, and barley plantings, and 20% of their wheat plantings. Plantings plus set-aside cannot exceed the farm's "normal crop acreage", described below.	
Diverted acreage	None		Feed grain producers who participate in the set-aside program may divert additional acreage equal to 10% of their 1978 planted acreage of corn, sorghum, and barley, and receive a payment of 20 cents per bushel for corn and 12 cents per bushel for sorghum and barley on their normal production from planted acres. However, producers' 1978 plantings cannot exceed 1977 plantings for each of the crops to be eligible for diversion payments.	
Farm allotments or program acreage	Based on 1959 and 1960 planted acreage for feed grains.		All farms have a "normal crop acreage", computed by ASCS, based on 1977 plantings of designated crops.	
Income support:				
Target price--Basis for providing deficiency payments to program participants.				
Corn Dol. per bu.	1/ 2.00		2.10	
Sorghum "	1/ 2.28		2.28	
Barley "	1/ 2.15		2.25	
Oats "	None		None	
Wheat "	1/ 2.90		* 3.40	
Payment made if average weighted U.S. price received by farmers in first 5 months of marketing year is below target. Payment rate is the difference between the target and the higher of farm price or the loan.	Payments determined by multiplying the farm's crop allotment times the farm's program yield times the payment rate.		Participants who voluntarily reduce their 1978 plantings from 1977 plantings by 5% for corn and sorghum and by 20% for barley and wheat will be eligible for target price protection on their entire acreage planted for harvest. A program allocation factor (between 80% and 100%) will be applied to the acreage of participants who do not reduce their plantings by these recommended percentages. Payments will be determined by multiplying the eligible acreage by the farm's program yield times the payment rate.	
Maximum payment rate is the difference between the target and loan.				
Price support:	Applicable on all grain produced by program participants. Farmer bears cost of storage during first year of loan.		Applicable on all grain produced by program participants. Farmer bears cost of storage during first year of loan.	
National average loan rate--Program participant puts up any part of crop as collateral for loan from Commodity Credit Corporation.				
Corn Dol. per bu.	2.00		2.00	
Sorghum "	1.90		2.00	
Barley "	1.63		1.90	
Oats "	1.03		1.63	
Wheat "	2.25		1.03	
Rye "	1.70		2.25-Preliminary	
			1.70	
Loan operation				
Application period	Until May 31, 1978, for corn and sorghum; March 31 for other crops.		To be announced	
Maturity date	9 months from loan approval date. 2/		To be announced	
Interest rate	6 percent per year.		To be announced	
Grain reserve program--3 years	Beginning March 1, 1978 for 1977-crop barley, oats, and wheat, and May 1, 1978 for 1977-crop corn and sorghum, crops under loan could be placed directly into the reserve. There is no interest charge after the first year. Farmers receive prepaid annual storage payments. First-year storage rates are 25 cents per bushel for wheat, corn, sorghum, and barley and 19 cents per bushel for oats. Loans may be redeemed when farm prices reach 125 percent of the current loan rates for feed grains and 140 percent for wheat. Loans will be called when prices reach 140 percent of loan rates for feed grains and 175 percent for wheat.		Reserve programs will be available for 1978 crops.	
Sales price of CCC owned grain	When grain reserve program is in effect, CCC may not sell grain for less than 150 percent of loan--except under the Emergency Livestock Feed Program.		Same as in 1977.	



Table 26.--Principal Features of Voluntary Feed Grain and Wheat Price and Income Support Programs, 1977 and 1978 Crops (Continued)

Item	Agriculture and Consumer Protection Act of 1973 (applicable to 1974-77 crops)	Food and Agriculture Act of 1977 (applicable to 1978-81 crops)
	1977 crop	1978 crop
Wheat grazing and hay program	None	Wheat producers who participate in the 20 percent set-aside may : : graze out their wheat or harvest hay on up to 40 percent or 50 : : acres (whichever is larger) of their total intended acreage of : : barley, corn, sorghum, upland cotton, and wheat for harvest in : : 1978, and receive a payment determined by multiplying their : : program yield by 50 cents a bushel or the wheat deficiency : : payment rate, whichever is higher.
Payment limits	\$20,000 per person.	\$40,000 per person; increases to \$50,000 by 1980.
Disaster payments for prevented plantings or low yields	Yes	Yes

1/ For any part of allotment not planted to wheat, the deficiency payment rate will be based on the "old" target price of \$2.47 per bushel. No deficiency payments will be made on 1977-crop corn since the loan rate and target price are set at the same level. Deficiency payments for sorghum and barley will only be made on acreage planted to sorghum and barley within their respective allotment. 2/ Producers holding loans approved before November 7, 1977, have the option of continuing those loans for 11 months or reducing the loan period to 9 months.

\*Pending Bill awaiting signature of the President; previous target price was \$3.00-3.05.

## CHRONOLOGY OF GRAIN PROGRAM ANNOUNCEMENTS

1976		August 25	Lengthened the repayment farm schedule for storage facility loan from 5 to 8 years.	March 29	Lifted the 30-35 million-ton limit on farmer-owned grain reserve.
February 24	Announced 1976 loan rates: corn, \$1.25; sorghum, \$1.19; barley, \$1.02; oats, \$0.60; wheat, \$1.50; rye, \$1.00.	August 29	World Food Security and 1978 set-aside plans announced and raised 1977 feed grain loan levels.		Participants in the wheat program can receive minimum payment of \$.50 per bushel for grazing out wheat on up to 40 percent of total acreage, or 50 acres, whichever is greater, of barley, corn, sorghum, upland cotton, and wheat planted for harvest in 1978.
	Target levels established on 1976 crops: corn, \$1.57; sorghum \$1.49; barley, \$1.28; wheat, \$2.29.		Food and feed grain reserve of 30 to 35 million metric tons before beginning of 1978/79 season, including a special international emergency food reserve of up to 6 million tons to be created.		Feed grain farmers who divert acreage equal to an additional 10 percent of their 1978 plantings of corn, sorghum, and barley for harvest will receive a payment based on normal production from total plantings of those crops. Payment rate is \$.20 a bushel for corn, \$.12 for sorghum and barley.
	Minimum CCC sales prices announced.		Intention to implement a 20-percent set-aside for 1978 crop wheat. Possibility of need for 1978 feed grain set-aside at 10 percent mentioned.		Loan and target prices announced for 1978.
October 13	Revised 1976 loan rates upward and announced 1977 loan rates at the same levels: corn, \$1.50; sorghum, \$1.43; barley, \$1.22; oats, \$0.72; rye, \$1.20; wheat, \$2.25.		1977 feed grain loan levels increased: corn to \$2.00; sorghum to \$1.90; barley to \$1.63; and oats to \$1.03.		Loan rates: corn, \$2.00; sorghum, \$1.90; barley, \$1.63; oats, \$1.03; rye, \$1.70; wheat, \$2.25.*
1977		September 29	The Food and Agriculture Act of 1977 signed into law.		Target prices: corn, \$2.10; sorghum, \$2.28*; barley, \$2.25*; wheat, \$3.00 for allotment underplanted, \$3.05 if allotment underplanted.
February 23	1977 target prices announced: corn \$1.70; sorghum \$1.62; barley \$1.39; and wheat \$2.47.		Announced a 20-percent set-aside program for 1978 crop wheat.		Wheat will be purchased to fill 220-million-bushel international emergency food reserve (pending legislation).
April 4	Established a farmer-owned 3-year wheat and price reserve program for 1976 crops under loan. USDA would make storage payments to farmers entering reserves.	November 15	Announced a conditional 10-percent set-aside and the 1978 national program acreage for corn, sorghum, and barley.		Beginning May 1, farmers can place 1977 crop corn and sorghum in the reserve program.
	Loan deadlines extended to May 31, 1977 for 1976 crops.	December 1	Final rules for set-aside permitting grazing set-aside for 6-month period.		Loan and target prices for 1978 crop rice increased to \$6.40 per cwt. and \$8.53 per cwt., respectively.
	Feed grain and soybean loans for 1977 crops increased: corn to \$1.75; sorghum to \$1.70; barley to \$1.50; oats to \$1.00; rye to \$1.50; and soybeans to \$3.50. Interest rates on commodity loans reduced from 7½ to 6 percent.	December 6	Grain reserve program expanded to include 1976 and 1977 feed grain crops as well as 1977 crop wheat.	April 21	Feed grain program signup extended to May 15.
	Farm storage facility loan interest rate reduced from 7½ to 7 percent; maximum loan increased to \$50,000, downpayment requirement cut from 30 percent to 15 percent.	1978			* = preliminary.
June 2	Proposed that cooperatives be eligible to participate in price support loan program on behalf of their members.	January 12	Announced target price levels for 1977 barley (\$2.15) and grain sorghum (\$2.28).		
July 20	Expanded farm facility loan storage program to include loans for building wet storage structures by dairymen and livestock feeders who need storage for high moisture feed.	February 6	Permit early entry into grain reserve (March 1, 1978) for 1977 wheat, barley, and oats under loan.		
	Wheat and feed grain loans scheduled to mature extended to October 31, 1977 at the option of the producer.	February 8	10 percent feed grain set-aside confirmed. Annual storage payment rates for reserve program raised to \$.25 per bushel for wheat, corn, sorghum, barley, and \$.19 for oats.		
August 15		March 1	Established emergency reserve and purchase of feed grains for disaster relief.		

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